

1777

2011年12月31日

Send to
Harry Tome

May 13, 1966

Mr. Grant Shumway (Lessee)
Alma Mine
Box 362
Blanding, Utah

Dear Mr. Shumway:

On the afternoon of May 11, 1966 I was at the Alma Mine and took three radon daughters samples, three carbon monoxide gas samples and three Nitrous Oxide gas samples of the working area. The radon daughters were below the three working level, but the area was poorly ventilated, you had three pieces of Diesel Equipment working in this area and there wasn't sufficient ventilating air to clear out the gases.

The carbon monoxide was high, but below the 100 P.P.M. limit, one sample at the face where the men were loading ran a high 20 P.P.M. Back where the unloaded Diesel truck waited, ran 10 P.P.M. CO. and the haulage way ran 8 P.P.M. carbon monoxide. The Nitrous Oxide exceeded the 5 P.P.M. limit as set up by U. S. Health Department (which the State of Arizona accepted as the safe nitrous oxide count.) All three places exceeded the 5 limit by many times. The area where the crew were loading holes counted a 100 P.P.M. (very dangerous) and the place where the truck was sidetracked, counted 20 P.P.M. of nitrous oxides. The third sample of the haulage way counted 40 P.P.M. of nitrous oxide.

These counts must be lowered immediately by getting at least 3,000 C.F.M. in the face of the working area. You are about a month behind on your reaming of drill holes to be used for ventilation, you have three holes near the face which if reamed and with fans on top would probably give you enough ventilating air for your Diesel operation, providing you shut the end loader down after loading the trucks instead of leaving it idling.

You still are using an unapproved Diesel end loader. May be why it hasn't been approved is because of the high amount of Nitrous Oxides that this engine produces, this is the highest Nitrous oxides that I have sampled in the State. I have taken gas samples directly in the exhaust of 135HP Diesels and they never were this high.

RECEIVED

JUN 19 1966

THE NAVAJO TRIBE
MINERALS DEPT.

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If you would have 9" holes to break into, then it wouldn't be much delay in getting good ventilation down through these holes after "holing" them. Now it takes at least a week and by the time you get ready, it is too far back to do much good and "so it goes".

I shall be up in the near future and recheck this Mine as I have to make Mitchel Mesa, the road was to slick on the 12th of May for me to make it.

The courtesies given me on my recent visit were greatly appreciated.

Very truly yours

Anthony Bennett
Anthony Bennett
Ariz.St. Mine Dust & Vent. Eng'r.

AB:b

cc: Henry F. Pohlman, Oil & Gas Supervisor, Mining division, Window Rock, Arizona
C.M. Collins, U.S.G.S. Carlsbad, New Mexico
Fred Jensen, Deputy State Mine Inspector
files

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MAY 18 '66

THE NAVAJO TRIBAL
OIL & GAS DEPT.

RADON DAUGHTER CONCENTRATIONS

Sheet # 1

Sample # 1

- A) Mine Name and Location Alma Mine, Kayenta, Arizona
- B) Company Name and Address Grant Shumway, (Lessee), Blanding, Utah
- C) Date 5/11/66; D) Temp. -- Outside 63 °F. Inside 58 °F.
- E) Description of Sampling Area Room about 10X10X8 where second truck is switched
while loading other truck. 5 men working in this
XXXXX general area.
- F) Description of Ventilation 9" hole to surface with fan on top blowing air down
Approximately 1,000 C.F.M. about fifty feet back from center of area.

Sampling Information

- G) Time Sample Started 4:04-20; H) Time Ended 4:11
- I) Total Time 6 min. 40 sec. Minutes; J) Pump Factor 3
- K) Total Volume Sampled 20 Liters (I x J)

COUNTING INFORMATION

- L) Time of Meter Reading 5:30
- M) Meter Reading 3; N) Scale X₁;

Computations

- O) Time between End of Sampling and Meter Reading (L-H) 79
- P) Daughter Concentration 1.7 x Working Level

* * * * *

Q) Sample Taken by Anthony Bennett *Anthony Bennett*

R) Sample Counted by " "

- S) Remarks: Places gassy-Diesel end loader had been idling while trucks were
out dumping, should be shut off as soon as trucks are loaded. Gas
Sampled by Draeger Counter-Carbon Monoxide 20 P.P.M. Nitrous Oxides
30 P.P.M.

RADON DAUGHTER CONCENTRATIONS

Sheet # 1

Sample # 2

A) Mine Name and Location Alma Mine, Kayenta, Arizona

B) Company Name and Address Grant Shumway, (Lessee) Blanding, Utah

C) Date 5/11/66; D) Temp. -- Outside 63 °F. Inside 58 °F.

E) Description of Sampling Area Rud T. Lager, Dean Shumway, Danny Anderson, Luther

Reisenduhover and Grant Shumway-All men were loading

blast holes in a room 50 feet across and 9 feet high.

F) Description of Ventilation There wasn't any ventilation, very gassy from Diesel

fumes, Vent hole about 100 feet back delivering

about 1000 C.F.M. (9" Hole from the surface-blower on top)

Sampling Information

G) Time Sample Started 4:19-20; H) Time Ended 4:26

I) Total Time 6 Min. 40 Sec. Minutes; J) Pump Factor 3

K) Total Volume Sampled 20 Liters (I x J)

COUNTING INFORMATION

L) Time of Meter Reading 5:42

M) Meter Reading 4; N) Scale X₁;

Computations

O) Time between End of Sampling and Meter Reading (L-H) 76

P) Daughter Concentration 2.4 x Working Level

* * * * *

Q) Sample Taken by Anthony Bennett 

R) Sample Counted by " "

S) Remarks: **EXXX** There were 4" drill holes in the face which were the test holes from surface, these should have been reamed to 9" or larger and then fans could be installed on top in short time. Gases sampled with Draeger Counter- Carbon Monoxide 10 P.P.M., Nitrous Oxides 100 P.P.M.

RADON DAUGHTER CONCENTRATIONS

Sheet # 1

Sample # 3

- A) Mine Name and Location Alma Mine, Kayenta, Arizona
- B) Company Name and Address Grant Shumway, (Lessee) Blanding, Utah
- C) Date 5/11/66; D) Temp.--Outside 63 °F. Inside 58 °F.
- E) Description of Sampling Area Sample taken along a distance of 200 feet in haulage way, width varying from about 20 down to 8 or 9 and height from 9 feet to 12 feet.
- F) Description of Ventilation 9" Drill holes from surface fans blowing air down from the surface- Place gassy.

Sampling Information

- G) Time Sample Started 4:45:20; H) Time Ended 4:52
- I) Total Time 5 Min. 40 Sec. Minutes; J) Pump Factor 3
- K) Total Volume Sampled 20 Liters (I x J)

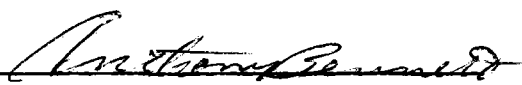
COUNTING INFORMATION

- L) Time of Meter Reading 5:43
- M) Meter Reading 5; N) Scale X₁;

Computations

- O) Time between End of Sampling and Meter Reading (L-H) 51
- P) Daughter Concentration 1.7 x Working Level

* * * * *

- Q) Sample Taken by Anthony Bennett 
- R) Sample Counted by " "
- S) Remarks: Place should be easy to ventilate as ~~XXXX~~ there isn't too much area.
Gases sampled with Draeger Counter-Carbon Monoxide 8 P.P.M.
Nitrous Oxide 40 P.P.M.

① Route
② Send to
Harry Tome

Ms. Gagey
as
4/5

June 24, 1966

RECEIVED
JUN 28 '66
THE NAVAJO TRIBE
OIL & GAS DEPT.

Mr. Grant Shumway (contractor)
Alma Mine
Box 362
Blanding, Utah

Dear Mr. Shumway:

I was at the Alma Mine on June 21, 1966 and was told that they had just blasted. I went over to your surface fans and checked all fauref them that were running, then went to the Portal of Incline and checked the Mines exhaust air.

Fan number	1-Yellow	-1000	at 12"	1520 C.F.M.
"	"	2-Black	- 2000 at 10"	1100 C.F.M.
"	"	3-Black	- 2400 at 10"	1320 C.F.M.
"	"	4-Yellow-excess	2500,	3000 C.F.M.
Total Air at Intake				
of fans				6920 C.F.M.

Air at Portal 70 ft/minute at 50 sq.ft. 3500 C.F.M.
You shut all fans off just a little while after I took my sample at the Portal because about five minutes later I went down incline about 100 feet and was going to check there, but there was no air movement.

I drove over to Black Mesa and took a radon daughters sample in the Underground area where it looked like you had been working (there was first aid kit, a case of 70% gelatin powder, dated January 12, 1966, five sacks of Ammonium Nitrate, roll of Primer Cord, a Jack leg, some drill steel and inside at the face were two shovels and a jackhammer back a short distance from face, plus some other stuff). You should not leave dynamite out where anyone can help themselves to it, it should be locked up in a magazine or hauled off the property when you quit working it. You told me you didn't figure on working until winter time so this dynamite will be available to anyone who sees it if they so desire to help themselves.

Thanking you for courtesies given me on my recent inspection, I am,

Very truly yours

Anthony Bennett

Ariz.St. Mine Dust & Vent. Eng'r.

(over)

RECEIVED
THE NAVAJO TRIBE
JUN 29 1966
MINING DEPT.

November 8, 1965

Mr. Grant Shumway (Partner)
Alma Mine Lease
Box 362
Blanding, Utah

Dear Mr. Shumway:

I received your letter of November 2, 1965, where you were rather perturbed over my letter of October 25, 1965, about my inspection at the Alma Mine on October 14, 1965. I did not state there was any Nitrous Oxide in the air sample I took right after the end loader and shuttle car had gone out the incline. I took Carbon Monoxide (CO) samples which read 50 parts per million CO (Carbon Monoxide) and 4 P.P.M. 5 minutes later of CO (Carbon Monoxide).

My copy of your letter definitely states this, read it again or maybe I should have spelled out Carbon Monoxide instead of just putting CO.

Hoping this straightens out your question.

Very truly yours

Anthony Bennett
Anthony Bennett
Ariz. St. Mine Dust & Vent. Eng'r.

AB:b

cc: C.V. Collins, Navajo Indian Agency, Window Rock, Arizona
Fred Jensen, Deputy Mine Inspector
files

RECEIVED
THE NAVAJO TRIBE
NOV 9 1965
MINING DEPT.

September 28, 1965

C
O
P
Y

Mr. Marshall J. Fletcher, Mgr.
Atlas Minerals Corp. (contr)
Boot Jack Mine
Mexican Hat, Utah


Dear Mr. Fletcher:

On September 21, 1965 I was on the 400 level of the Boot Jack Mine and took radon daughters samples in the old ventilation drift at the bulkhead. This drift was in waste but there was water running out the drift and evidently was carrying some radon. My sample counted two times working level, working level set up by U. S. Health as a safe amount of radon daughters concentration that one can work in without any health damage.

I'm sure that with the ventilation program you outlined to me, you will not be bothered with radiation.

The cooperation and courtesies given me on my recent inspection were greatly appreciated.

Very truly yours


Anthony Bennett
Aris.St. Mine Dust & Vent. Eng'r.

AB:b

cc: C.V. Collins, Eng'r. Navajo Indian Agency, Window Rock, Arizona
Chas. McConnell, U. S. G. S. Carlsbad, New Mexico
Fred R. Jensen, Deputy State Mine Inspector
files

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THE NAVAJO TRIBE

OCT 4 1965

MINING DEPT.

RADON DAUGHTER CONCENTRATIONS

Sheet # 2

Sample # 1

- A) Mine Name and Location Boot Jack-- Kayenta, Arizona
- B) Company Name and Address Atlas Corporation-- Kayenta, Arizona
- C) Date 9/21/65; D) Temp. --Outside 58 °F. Inside 61 °F.
- E) Description of Sampling Area Back in old ventilation drift on 400 level where
bulkhead was,
- F) Description of Ventilation Fan blowing down shaft approximately 41,800 C.F.M.

Sampling Information

- G) Time Sample Started 10:48:20; H) Time Ended 10:55
- I) Total Time 6:40 Minutes; J) Pump Factor 3.
- K) Total Volume Sampled 20 Liters (I x J)

COUNTING INFORMATION

- L) Time of Meter Reading 11:32
- M) Meter Reading 2 1/2; N) Scale X₁;

Computations

- O) Time between End of Sampling and Meter Reading (L-H) 92
- P) Daughter Concentration 2 x Working Level

* * * * *

- Q) Sample Taken by Anthony Bennett *Anthony Bennett*
- R) Sample Counted by " "
- S) Remarks: Mine was just completed being unwatered.

September 29, 1965

Mr. Grant Shumway, (contractor)
Alma Mine'
Box 362
Blanding, Utah

Dear Mr. Shumway:

I was at your property, the Alma Mine, on September 21, 1965 but there was no one working as you had pump trouble and the Mine was flooded.

You have not got a permit to use the Diesel Shuttle Cars (Bureau of Mines approved) in your operation, also the end loader is not approved and must be replaced with one that is approved. Arizona Law 27-364-01 is violated, also Arizona Law 27-342 is violated, you do not have two ways out from your Mine.

You do not have sufficient volume of ventilating air in your workings to fill the requirements of the approval plate on your approved piece of Diesel Equipment. We have not received word in this office that the shut down order has been released by either Mr. Collins or Mr. McConnell or Mr. Jensen, until we get a go ahead sign from either Mr. Collins or Mr. McConnell you are closed down and will be violating the Arizona State Mining Code to operate. The only work you can do is pump water and repair Portal, until the provisions in the shut down order is satisfied.

Very truly yours


Anthony Bennett

Ariz.St. Mine Dust & Vent. Eng'r.

AB:b

cc: C.V. Collins, Eng'r. Navajo Indian Agency, Window Rock, Arizona
Chas. McConnell, U. S. G. S. Carlsbad, New Mexico
Fred R. Jensen, Deputy State Mine Inspector
files

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SEP 1 1965

MINING DEPT.

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THE NAVAJO TRIBE

JUN 24 1965

MINING DEPT.

June 25, 1965

Mr. Grant Shumway (contractor)
Alma Mine
Box 362
Blanding, Utah

Dear Mr. Shumway:

I was at your mining property (The Alma Mine) near Kayenta Arizona on June 15, 1965 and checked the Diesel gases during an end loader truck operation.

The Diesel is not a Bureau of Mines approved piece of equipment, but according to your men was Okayed by Mr. Collins of the Navajo Indian Agency and Mr. Nickelson of the U.S.G.S. I believe they told you to put more ventilating air down into the Mine. (Which you haven't done). I am asking for more Ventilating air of sufficient volume to dilute the air, when diesel equipment is operating, down to a safe working level for Nitrous Oxides of which I got a fairly high count in the Incline after the truck had gone out. This reading was at threshold limit 5.P.P.Million, down at the End loader I got 4 P.P.M. during truck loading cycle, showing insufficient air to clear out the diesel gases. (There was no Carbon Monoxide).

I checked Intake of both fans and got 1430 C.F.M. on big fan, with a lot of leakage and 490 C.F.M. on the small fan, probably less than a 1000 C.F.M. gets underground which is not enough, also some of this goes back up the open drill holes so that all of the 1000 C.F.M. is not available in the working areas.

I suggested to your brother to ream the holes out along the Ore body and then as you break into new holes, close off the old ones after moving fan on to the new holes so that the total exhaust would be carried up the incline where the diesel truck runs most of its running time.

I shall be up in the near future to check on the radiation. Thanking your men for courtesies and cooperation on my recent visit, I am,

Very truly yours

Anthony Bennett
Anthony Bennett

Ariz.St. Mine Dust & Vent. Eng'r.

AB:b

cc: C.V.Collins, Window Rock, Arizona-- Charles McConnel, Carlsbad, N. Mexico
Fred Jensen, Deputy Mine Inspector & files



WILLIAM H. HAYS

State Inspector of Mines
1024 Park Avenue, S.W.
Albuquerque, New Mexico

Office Telephone CHapel 2-7373
Residence Phone ALpine 5-9466

REPORT OF INSPECTION

Encos Johnson Mine (A. & B. Mining Co.)

(Name)

{ Mine, ~~NEW~~
~~Albuquerque~~
~~underground~~ }

July 12, 1962

(Date of Inspection)

Uranium

San Juan

R. L. Williams, Partner

C. V. Collins, Tribal Mining Engineer

(Classification of Mine)

(County in which located)

(Company representative present at inspection)

Pursuant to the Mining Laws of the State of New Mexico, Section 63-4-8, an inspection, as designated above, has been made. During this inspection the following was noted:

On the above date the writer accompanied Mr. William H. Hays, State Inspector of Mines, during a follow-up inspection of the above named mine.

The purpose of this inspection (which was requested by Mr. Adair) was to check on the violations and/or hazards that caused the writer to issue a cease mining operation order on June 6, 1962. It was noted that all the violations and/or hazards that were observed during the initial inspection made June 6, 1962 have been corrected completely.

A close check made on the pillars that are to be extracted showed a considerable amount of subsidence. Since said pillars shall be extracted as soon as possible, Mr. Hays and the writer agreed to permit the use of the T-340 International diesel frontend loader (which is not equipped with a U.S. Bureau of Mines approval plate) to extract the ore. Said unit is equipped with an approved scrubber, a five (5) squeeze test made with a M.S.A. CO tester equipped with a scrubber showed .0025% of CO concentration. This unit shall be kept fully equipped in accordance with the State Mine Safety Law and shall be tested for CO concentrations weekly, and the results kept in a log.

Since said unit has not been approved by the U.S. Bureau of Mines for underground use, this department cannot issue a permit for underground operation.

Mr. Adair and Mr. Williams are fully aware that they must have said unit approved by the U. S. Bureau of Mines or have it replaced with an approved unit in the near future.

This department will issue a written permit permitting the No. 1 Young buggy equipped with a 20 H.P. Deutz diesel engine No. 2549461/62 Type F21-712, and approval plate No. 2424 to operate underground. A test made on said unit showed no trace of CO concentrations and it was equipped with good brakes, lights, fire extinguisher, and horn.

The ventilation has been increased by installing an electrical driven booster fan in the 920 foot vent line.

It has also been changed from blowing to exhaust as recommended by Mr. Hugh C. Colman, Dust and Mine Gas Engineer, Deputy State Inspector of Mines, during his previous ventilation inspection.

Continue on page 2

WILLIAM H. HAYS

State Inspector of Mines



WILLIAM H. HAYS

State Inspector of Mines
1024 Park Avenue, S.W.
Albuquerque, New Mexico

Office Telephone CHapel 2-7373
Residence Phone ALpine 5-9466

REPORT OF INSPECTION

Enos Johnson Mine (A. & B. Mining Co.)

(Name)

{ Mine, ~~NEW~~
~~ALBUQUERQUE~~
~~ALBUQUERQUE~~ }

July 12, 1962

(Date of Inspection)

(Classification of Mine)

(County in which located)

(Company representative present at inspection)

Pursuant to the Mining Laws of the State of New Mexico, Section 63-4-8, an inspection, as designated above, has been made. During this inspection the following was noted: **Page 2**

An air reading taken at the outlet of the vent line outby the portal showed 6,135 C.F.M.

An air reading taken at the intake located near the working area showed 6,135 C.F.M. which should be adequate for the present operation.

Mr. Colman will check and sample the mine atmosphere for Radon Daughter concentrations in the near future.

Roof support was adequate, the high back (roof) in the haulageway has been laced over with timber. Suitable stulls have been installed in the working area. Fire extinguishers have been provided and placed at the portal and near the generator motor.

Messrs. Adair and Williams were requested to make the following corrections before re-suming mining operation:

- (1) Provide a suitable detonator magazine and to post Danger High Explosive and No Smoking signs near the explosive magazine.
- (2) Fuses shall not be cut shorter than 72". The burning rate of fuses shall be determined and the results posted in accordance with the State Mine Safety Laws, Section 63-23-10, page 92.
- (3) Suitable bags or wooden boxes shall be provided and used for transporting loose powder and capped fuses to and from the blasting area, Section 63-25-12, page 92.
- (4) Suitable stulls shall be installed at the entrance to the powder magazine.
- (5) Since there is a possibility of a person injuring himself by coming in contact with the exposed balancing wheels of the fan and generator engines, said engines shall be guarded or fenced off.

A copy of this inspection report shall be posted at the mine site, where it can be read and where it shall remain until superseded by the next report of inspection.

Continue on page 3

WILLIAM H. HAYS

State Inspector of Mines



WILLIAM H. HAYS

State Inspector of Mines
1024 Park Avenue, S.W.
Albuquerque, New Mexico

Office Telephone CHapel 2-7373
Residence Phone ALpine 5-9466

REPORT OF INSPECTION

Enos Johnson Mine (A. & B. Mining Co.)

(Name)

{ Mine, ~~Mine~~
~~other operation~~ }

July 12, 1962

(Date of Inspection)

(Classification of Mine)

(County in which located)

(Company representative present at inspection)

Pursuant to the Mining Laws of the State of New Mexico, Section 63-4-8, an inspection, as designated above, has been made. During this inspection the following was noted: Page 3

Another inspection will be scheduled at a later date.

The courtesy and co-operation of Messrs. Adair and Williams during this inspection is gratefully acknowledged.

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THE NAVAJO TRIBE

8 1962

MINING DEPT.

Inspected and reported by:

William H. Hays

State Inspector of Mines

and:

Joe D. Longacre, Sr.

Deputy State Inspector of Mines

William H. Hays

WILLIAM H. HAYS

State Inspector of Mines

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF MINES
HEALTH AND SAFETY ACTIVITY

DISTRICT E

1457 Ammons Street
Post Office Box 15037
Lakewood, Colorado 80215

June 13, 1966

File No. *437.2

Memorandum

To: Acting District Manager, District E

From: Mining Health and Safety Engineer

Subject: Special Inspection, Secretary's Order 1940, Alma Uranium Mine, Navajo Indian Reservation, Kayenta, Arizona.

On May 11, 1966, Anthony Bennett, Arizona State mine dust and ventilation engineer, inspected the subject mine and found concentrations of carbon monoxide and nitrogen dioxide above the maximum allowable.

A letter from C. M. McConnell, deputy regional mining supervisor, U.S.G.S., May 17, 1966, instructed Grant Shumway, permit holder, to stop all production until mine ventilation was established to deliver not less than 7,000 CFM of air in all the working areas.

On June 6, 1966, C. M. McConnell and I visited the subject mine to conduct a special inspection. All work was confined to reaming a drill hole to be used in improving ventilation. The operator estimated that the reaming should be completed and the fan installed by the following day. On the following day, I revisited the mine. The drill pipe was stuck in the drill hole and further work could not be carried out until the drill string was freed. After observing the operation, it appeared that the fan would not be installed for sometime. The installation of the fan on this drill hole should provide the required ventilation and, since the completion time for this work was uncertain, an inspection was not made.


George R. Kyler

cc: Comar., Indian Affairs
Area Director, Bureau of Indian Affairs
Supt. Navajo Service
Navajo Tribe, Oil and Gas Dept. ✓
Chairman, Navajo Council

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MAR 15 1967

THE NAVAJO TRIBE
MINERALS DEPT.

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JUN 15 '66

THE NAVAJO TRIBE
OIL & GAS DEPT.

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF MINES
HEALTH AND SAFETY ACTIVITY

DISTRICT E

1457 Ammons Street
Post Office Box 15037
Lakewood, Colorado 80215

June 13, 1966

File No. *437.2

Memorandum

To: Acting District Manager, District E

From: Mining Health and Safety Engineer

Subject: Secretary's Order 1940, inspection of uranium mines on
Navajo Indian Reservation, Kayenta, Arizona

On June 6, 1966, George R. Kyler, and C. M. McConnell visited the Boot Jack mine operated by the AZ Minerals Corporation near Kayenta, Arizona for the subject inspection. Mining operations had been abandoned, the shaft was covered, and surface facilities had been removed. It did not appear that operations would be resumed in the near future.


George R. Kyler

cc: Commr. Indian Affairs
Area Dir., Div. of Ind. Affairs
Supt. Navajo Service
Navajo Tribe Oil and Gas Dept. ✓
Chairman, Navajo Council

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JUN 15 '66
THE NAVAJO TRIBE
OIL & GAS DEPT.

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF MINES
HEALTH AND SAFETY ACTIVITY

DISTRICT E

1457 Ammons St.
P. O. Box 15037
Denver, Colorado 80215

March 14, 1967

File No. 473

Memorandum

To: E. W. Felegy, District Manager, District E *EF*
From: Mining Health and Safety Engineer
Subject: Diamond No. 2 mine, A and B Mining Company, Gallup, McKinley
County, New Mexico, I.D. 22054-029-016-10946

The subject mine was visited for reinspection March 7, 1967, but operations were no longer being conducted on the Indian allotted portion of the property. For this reason, a formal inspection was not made; however, radon daughter samples were taken at the operator's request and sample results were discussed with him.

The operator anticipated resuming work on the allotted portion of the property in April or May, 1967.

R. L. Rock
R. L. Rock

cc: J. D. Turner, Washington, D.C.
R. S. Fulton, Carlsbad, N.M.
Commr. Indian Affairs, Washington, DC
Area Dir., Bur. Indian Affairs, Gallup, N.M.
Supt. Navajo Service, Window Rock, Arizona
✓ Tribal Mining Engineer, Window Rock, Arizona
Chairman, Navajo Council, Window Rock, Ariz.
E. A. Morgan, Phoenix, Arizona

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MAR 16 1967
THE NAVAJO TRIBE
MINERALS DEPT.



IN REPLY REFER TO:

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

P. O. BOX 1716
CARLSBAD, NEW MEXICO 88220
December 9, 1966

REPORT OF EXAMINATION
SAND & GRAVEL PERMIT
NAVAJO RESERVATION
ALLISON & HANEY
SAND JUAN COUNTY, NEW MEXICO

SAND & GRAVEL
14-20-0603-8978

by
Lawrence E. Gordon
Mining Inspector

U. S. DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
BRANCH OF MINING OPERATIONS
CONSERVATION DIVISION

On November 15, 1966, the writer and R. L. Rock, Mining Health & Safety Engineer, U. S. Bureau of Mines, accompanied by Clifford Ford, Superintendent of the operation, made an examination of the subject sand and gravel permit. Allison and Haney, Inc. operate the business selling sand and gravel and ready-mix concrete from the facilities located about 2 miles north of Shiprock, New Mexico, on the east side of U. S. Highway 666. A previous examination was made on July 21, 1966.

During the normal course of operation five men are employed on a single shift five days a week (3 Indians). Pit run material produced from the pit is dozed directly in to the trap which feeds the crushing and cleaning plant. Various sized products from the plant were stockpiled, sent to the washing or batch plant, or loaded into trucks for direct sales. Presently about 12,600 cubic yards of crushed material was stockpiled near the office.

On the date of this inspection the washer was being operated but the crushing plant was idle. The washed material was being produced for use at the concrete batch plant which is operated intermittently as the demand arises.

Generally the equipment appeared to be in a safe condition and house-keeping around the plant and shop was good. However, Mr. Ford was instructed to replace the guard on the conveyor feeding screen to the washer and to provide a tool rest on the grinder in the shop. No

extremely steep highwalls around the pit were observed. Stockpiled material not being loaded was well trimmed. Those being loaded from were steep but did not appear to present a hazard to the loader operator. Danger signs were to be stuck in the active piles to warn unauthorized personnel or children of the danger of the sloughing off of material.

No other safety violations or violations of the permit terms were noted during the examination.

Lawrence E. Gordon
Lawrence E. Gordon
Mining Inspector

Orig. to: Director, Navajo Area Office
cc: Comm., Office of Indian Affairs
: Navajo Tribal Mining Engineer ✓
: Chief, Branch of Mining Operations
: Files
: Bureau of Mines, Denver

RECEIVED
DEC 13 1968

NAVADO TRIBE
MINERALS DEPT.



UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF MINES

Health and Safety Activity

DISTRICT E

1457 AMMONS STREET
POST OFFICE BOX 15037
LAKEWOOD, COLORADO 80215

November 23, 1966

File No. 473

Clifford Ford, Superintendent
Allison and Haney Sand and Gravel Pit
P. O. Box 637
Shiprock, New Mexico

Subject: Health and Safety Inspection Report
Allison and Haney Sand and Gravel Pit
Allison and Haney Company
Shiprock, San Juan County, New Mexico

Dear Mr. Ford:

The enclosed report covers a health and safety inspection of the above-named mine made in compliance with Order No. 1940, April 4, 1944, by the Secretary of the Interior.

Any comments you desire to make concerning the inspection or report will be appreciated.

Sincerely yours,

E. W. Felegy

E. W. Felegy
District Manager

Enclosure (2)

cc: Tribal Mining Eng.

RECEIVED
NOV 28 1966
THE INDIAN BUREAU
MINERALS DEPT.

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF MINES
HEALTH AND SAFETY ACTIVITY

HEALTH AND SAFETY INSPECTION REPORT
ALLISON AND HANEY SAND AND GRAVEL PIT
ALLISON AND HANEY COMPANY
NAVAJO INDIAN RESERVATION
SHIPROCK, SAN JUAN COUNTY, NEW MEXICO

November 15, 1966

By

R. L. Rock
Mining Health and Safety Engineer

Originating Office - Bureau of Mines
P. O. Box 15037, Lakewood, Colorado 80215
E. W. Felegy, District Manager
Health and Safety District E

HEALTH AND SAFETY INSPECTION REPORT
ALLISON AND HANEY SAND AND GRAVEL PIT
ALLISON AND HANEY COMPANY
NAVAJO INDIAN RESERVATION
SHIPROCK, SAN JUAN COUNTY, NEW MEXICO

November 15, 1966

By

R. L. Rock
Mining Health and Safety Engineer

INTRODUCTION

This report is based on a health and safety inspection made in compliance with Order No. 1940, April 4, 1944, by the Secretary of the Interior authorizing the Bureau of Mines to inspect mines on Indian lands and Government-leased lands on the Public Domain.

The purpose of the inspection and the report is to call to the attention of all concerned the hazards observed at the operation during the inspection and to recommend means of correcting these hazards.

Safety improvements made since the last inspection, November 17, 1965, are listed in this report. Recommendations repeated from the last report are indicated by asterisks.

GENERAL INFORMATION

The Allison and Haney sand and gravel operation was 2 miles north of Shiprock, New Mexico, just east of U. S. Highway 666. The company mailing address was P. O. Box 637, Shiprock, New Mexico. Clifford Ford, superintendent, and Earl Gordon, U. S. Geological Survey, accompanied the writer during the inspection and information was discussed with them.

The operation afforded employment for five men, 5 days a week.

The washer was being operated but the crushing plant was idle at the time of the inspection. Crushed material was being washed for sale as aggregate.

WASHING AND SCREENING

Ladders around the washing equipment were in satisfactory condition. Reportedly, men were not allowed to perform maintenance of any kind on moving equipment. A guard had been removed from the conveyor feeding the screen to the washer. Mr. Ford said he would have the guard replaced.

FIRE HAZARDS AND FIREFIGHTING EQUIPMENT

"No Smoking" signs were provided at fuel-storage areas.

Compressed gas and liquefied petroleum tanks were guarded against vehicular contact.

LOADING AND HAULING

Rock and sand were loaded into trucks using a front-end loader. The trucks hauled the material to hoppers at the washer and at the crusher. Crusher feed material was scraped from the hillside; a pit was not left.

GROUND CONTROL

Stockpiles not being loaded from were well trimmed. Those being loaded from were steep and, although they did not appear to present a hazard to the loader operator, they conceivably could slough off onto children who reportedly sometimes played in the area. Mr. Ford agreed to provide signs which could be stuck into active piles to warn children of the danger of playing near them.

GENERAL HEALTH AND SAFETY

Compressed gas cylinders in the shop were secured against accidental upset.

The grinder in the shop was not provided with a tool rest.

There had been no lost-time accidents since the previous inspection.

SAFETY IMPROVEMENTS

Surface (Washing and screening plant)

The broken ladders had been disposed of.

Fire Hazards and Firefighting Equipment

Oil storage areas were posted "No Smoking."

The liquefied petroleum gas tank next to the trailer house was guarded.

The gas cylinder outside the office building was secured and guarded.

Ground Control

Inactive stockpiles were sloped to the angle of repose.

General Health and Safety

Unsecured oxygen-acetylene cylinders were not observed in the shop.

RECOMMENDATIONS

Surface (Washing and screening plant)

The guard on the conveyor feeding the screen to the washer should be replaced.

Ground Control

Signs should be provided which can be stuck into active stockpiles to warn children of the danger of playing near them.


General Health and Safety

*The grinder in the shop should be provided with a tool rest.

ACKNOWLEDGMENT

The cooperation of officials and employees during this inspection is gratefully acknowledged.

Respectfully submitted,



R. L. Rock
Mining Health and Safety Engineer

Approved:



E. W. Felegy
District Manager

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF MINES
HEALTH AND SAFETY ACTIVITY

DISTRICT E

1457 Ammons Street
Post Office Box 15037
Lakewood, Colorado 80215

June 13, 1966

File No. *437.2

Memorandum

To: Acting District Manager, District E

From: Mining Health and Safety Engineer

Subject: Special Inspection, Secretary's Order 1940, Alma Uranium
Mine, Navajo Indian Reservation, Kayenta, Arizona.

On May 11, 1966, Anthony Bennett, Arizona State mine dust and ventilation engineer, inspected the subject mine and found concentrations of carbon monoxide and nitrogen dioxide above the maximum allowable.

A letter from C. M. McConnell, deputy regional mining supervisor, U.S.G.S., May 17, 1966, instructed Grant Shumway, permit holder, to stop all production until mine ventilation was established to deliver not less than 7,000 CFM of air in all the working areas.

On June 6, 1966, C. M. McConnell and I visited the subject mine to conduct a special inspection. All work was confined to reaming a drill hole to be used in improving ventilation. The operator estimated that the reaming should be completed and the fan installed by the following day. On the following day, I revisited the mine. The drill pipe was stuck in the drill hole and further work could not be carried out until the drill string was freed. After observing the operation, it appeared that the fan would not be installed for sometime. The installation of the fan on this drill hole should provide the required ventilation and, since the completion time for this work was uncertain, an inspection was not made.


George R. Kyler

cc: Commr., Indian Affairs
Area Director, Bureau of Indian Affairs
Supt. Navajo Service
Navajo Tribe, Oil and Gas Dept.
Chairman, Navajo Council ✓

RECEIVED

JUN 15 1966

100-100000-100000

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF MINES
HEALTH AND SAFETY ACTIVITY

DISTRICT E

1457 Ammons Street
Post Office Box 15037
Lakewood, Colorado 80215

June 13, 1966

File No. *437.2

Memorandum

To: Acting District Manager, District E

From: Mining Health and Safety Engineer

Subject: Secretary's Order 1940, inspection of uranium mines on
Navajo Indian Reservation, Kayenta, Arizona

The Moonlight uranium mine, Industrial Uranium Company; the Mitchell Mesa uranium mine, Robert Shriver; and the Monument No. 1 uranium mine, Robert Tripp; were visited for the subject inspection June 6, 1966. The Monument No. 1 mine appeared to be abandoned with all equipment except a front-end loader removed from the property. The other two mines were apparently temporarily idle.


George R. Kyler

cc: Commr. Indian Affairs
Area Dir. Bur. of Indian Affairs
Supt. Navajo Service
Navajo Tribe Oil and Gas Dept.
Chairman Navajo Council

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF MINES
HEALTH AND SAFETY ACTIVITY

DISTRICT E

1457 Ammons Street
Post Office Box 15037
Lakewood, Colorado 80215

June 13, 1966

File No. *437.2

Memorandum

To: Acting District Manager, District E

From: Mining Health and Safety Engineer

Subject: Secretary's Order 1940, inspection of uranium mines on
Navajo Indian Reservation, Kayenta, Arizona

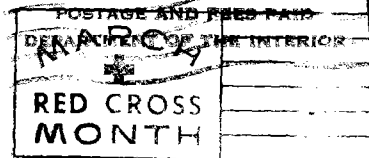
On June 6, 1966, George R. Kyler, and C. M. McConnell visited the Boot Jack mine operated by the AZ Minerals Corporation near Kayenta, Arizona for the subject inspection. Mining operations had been abandoned, the shaft was covered, and surface facilities had been removed. It did not appear that operations would be resumed in the near future.


George R. Kyler

cc: Commr. Indian Affairs
Area Dir., Div. of Ind. Affairs
Supt. Navajo Service
Navajo Tribe Oil and Gas Dept.
Chairman, Navajo Council

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF MINES
HEALTH & SAFETY ACTIVITY DISTRICT
POST OFFICE BOX 15037
LAKEWOOD, COLORADO 80215

OFFICIAL BUSINESS



Mr. Raymond Nakai, Chairman
Navajo Tribal Council
Window Rock, Arizona

87110

R-8
M. P. 18

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF MINES
HEALTH AND SAFETY ACTIVITY

HEALTH AND SAFETY INSPECTION REPORT
ENOS JOHNSON MINE (URANIUM)
A AND B MINING COMPANY
SANOSTEE, SAN JUAN COUNTY, NEW MEXICO

October 10, 1963

By

R. L. Rock and R. C. Derzay

Originating Office - Bureau of Mines
1457 Ammons, P. O. Box 15037, Lakewood, Colorado 80215
J. Howard Bird, District Supervisor
Health and Safety, District H

HEALTH AND SAFETY INSPECTION REPORT
ENOS JOHNSON MINE (URANIUM)
A AND B MINING COMPANY
SANOSTEE, SAN JUAN COUNTY, NEW MEXICO

October 10, 1963

By

R. L. Rock and R. C. Derzay

INTRODUCTION

This report is based on a health and safety inspection made in compliance with Order No. 1940, April 4, 1944, by the Secretary of the Interior authorizing the Bureau of Mines to inspect mines on Indian Lands and Government-leased lands on the Public Domain.

The purpose of the inspection and the report is to call to the attention of all concerned the hazards observed in the mine and surface plant during the inspection and to recommend means of correcting these hazards.

Safety improvements made since the last inspection, April 23, 1963, are listed in this report. Recommendations repeated from the last report are indicated by asterisks.

Descriptions of physical features and operating procedures included in the previous report concerning which no recommendations are made in this report are not repeated here.

GENERAL INFORMATION

Ray Williams, Partner, A and B Mining Company, operated the mine for the company with the help of two Navajo Indians. The mine was worked single shift, 5 days a week. Mr. Williams accompanied the engineers during the inspection and the recommendations in this report were discussed with him.

SURFACE

The 210 c.f.m.-capacity, gasoline-engine-powered compressor appeared to be in satisfactory condition from a safety standpoint. The engine exhaust was extended sufficiently to preclude the chance of combustion gases entering the compressor air inlet. The pressure-release valve on the high pressure side was operable.

STORAGE AND USE OF EXPLOSIVES

Dynamite and detonators were safely stored in separate, locked, posted, adit-type magazines. Ammonium nitrate-fuel oil was not used. Unused explosives were not found in the mine.

LOADING, HAULING AND DRILLING

Underground loading was done with a small, diesel-powered loader which did not bear a U. S. Bureau of Mines Approval plate. The diesel-powered ore carrier bore U. S. Bureau of Mines Approval 24-24 requiring 2,000 c.f.m. of ventilation.

Drilling was done with an air-leg machine using water during collaring and drilling to allay dust. Unsafe loading, hauling, or drilling practices were not apparent.

GROUND CONTROL

The sandstone back in the adit and active mine areas was tested with a sounding stick; the back sounded and appeared solid. A scaling bar was available and obviously used.

VENTILATION

The mine was ventilated by a diesel-powered, centrifugal fan located on the surface blowing air into the mine thru 14-inch ventilation tubing. This fan blew about 7,000 c.f.m. of air into the mine where it was discharged behind a loosely hung brattice. Two, electrically-powered auxiliary fans were used to pick up this air and course it on to the active face areas. The combined capacities of the two auxiliary blowers was greater than the volume of air the main surface fan was providing, so that there was necessarily some recirculation. This was evidenced by a smoke survey of the movement of the air currents.

Mr. Williams speeded up the surface blower to increase its output and agreed to tighten the brattice out from the discharge end of the main vent-tube. These two measures should reduce or eliminate recirculation. Aside from the recirculation problem which adversely affected the radon daughter concentrations in the mine (see radiation section) the face ventilation was good.

RADIATION

Radon daughter concentrations measured are listed in multiples of the recommended safe working level (W.L.) in Table 1. One working level, 1.3×10^5 million electron volts of potential alpha energy per liter of air, has been established as the maximum concentration of radon daughters to which a man can be safely exposed throughout his working life time. Table 2 lists the projected average daily exposure experienced by the miners on the day of the inspection.

Ventilation had commenced about 20 minutes prior to the first samples taken. A very significant reduction in the radon daughter concentrations is correlateable with the time which had elapsed since the fans were started.

Table 1

Location, Time, Number of Men, Operation	Radon-daughter Concentration W.L. ^{1/}	V ₁ c.f.m. ^{2/}
East Stope Heading, 9:42 a. m., No. Men, Will Work Here Afternoon	40.	2,000 (at vent tube discharge)
North Headings, 9:50 a. m., 2 Men, Mucking Out	40.	4,000 (at vent tube discharge)
Haulageway, 10:00 a. m., 1 Man, Trammig Ore	55.	7,000 (in haulageway near portal)
North Headings, 11:15 a. m., 2 Men, General Mining	8.0	4,000
North Headings, 12:40 p. m., 2 Men, General Mining	5.2	4,000

^{1/}Reported in multiples of a safe working level (W.L.).

^{2/}Measured ventilation.

Table 2

No. Men	Location Operation	Estimated average full shift exposure to radon-daughters ^{1/}
3	East Stope, North Stope and Haulageway	10.

^{1/}This average level was estimated from information gained in questioning the miners as to where their time was spent and weighting the radon-daughter concentrations in these various places by the time spent in them. Main areas of exposure are generally included such as, working place, lunch, travel to and from stope, securing supplies, etc. If the blowers were turned on enough time before the beginning of the shift to allow the removal of the overnight buildup of radon daughters, the full-shift exposure average could probably be held to about 4. W. L. s.

QUALITY OF AIR

Direct reading field test instruments were used to measure CO (carbon monoxide) and NO₂ (nitrogen dioxide) concentrations in the mine air during this survey.

In addition, a mine air sample was collected in a vacuum bottle during the survey and was analyzed in the Bureau of Mines laboratory, Denver Colorado.

Both field test and laboratory analytical results are shown in Table 3.

Table 3

Sample No.	Place, time	PERCENT					Ppm* NO ₂
		O ₂	CO ₂	CO	CH ₄	N ₂	
1	East Heading, 9:45 a. m.	-	-	Trace	-	-	0
2	North Headings, 9:50 a. m.	-	-	0	-	-	0
X-1830	Return Air, 10:10 a. m.	20.87	0.08	-	0.00	79.05	-

*Parts per million

Air for ventilation is considered to be of satisfactory quality when it contains at least 19.5 percent O₂ (oxygen), not more than 0.5 percent CO₂ (carbon dioxide), and no harmful quantities of dust or noxious gases. The threshold limit value for CO is 0.01 percent and for NO₂ is 5 parts per million.

The results listed in table 3 indicate that the air was of satisfactory quality with respect to these gases at the times and places shown.

ELECTRICITY

Electric power for operating the auxiliary blowers and charging the cap lamp batteries was generated by an 8 Kw diesel-powered generator located in a short adit near the portal. The blowers and generator equipment were all grounded.

GENERAL HEALTH AND SAFETY

The men wore safety-toe shoes and hard hats underground. Electric cap lamps were used for underground illumination. First aid supplies were available.

SAFETY IMPROVEMENTS

The following safety improvements were made since the last survey:

Storage and Use of Explosives

Unused dynamite was not kept in the mine.

Ventilation

Ventilation tubing was extended well up to all active headings.

General Health and Safety

The men wore safety-toe shoes.

RECOMMENDATIONS

Recommendations repeated since the previous survey are indicated by asterisks.

Loading, Hauling and Drilling

Only Bureau of Mines approved^{1/} mobile diesel-powered equipment should be used underground. Bureau of Mines approved equipment should be used to replace or add to the mobile diesel-powered equipment now in use underground when replacement of present equipment, or additional equipment, is necessary.

Ventilation

The ventilation should be adjusted so that the recirculation of air is minimized.

The brattice out from the discharge of the main vent-tube should be sealed off to minimize recirculation in that area.

^{1/}Bureau of Mines approvals for mobile diesel-powered equipment are issued to the manufacturer only after application to and tests by the Branch of Electrical-Mechanical Testing, Bureau of Mines, Pittsburgh 13, Pennsylvania. Approved equipment is identified by a Bureau of Mines approval plate attached to each complete unit.

Radiation

*Control measures should be taken to reduce the men's average, full-shift, radon daughter exposure to one working level or less.

Ventilation fans should be run continuously or started soon enough before the beginning of the shift to allow the removal of the overnight buildup of radon daughter concentrations.

ACKNOWLEDGMENT

The cooperation of Mr. Williams and the miners during the inspection is gratefully acknowledged.

Respectfully Submitted,

Approved

A. C. Moschetti
A. C. Moschetti
Acting

J. Howard Bird
District Supervisor

R. L. Rock
R. L. Rock
Mining Health and Safety Engineer

/s/R. C. Derzay
R. C. Derzay
Mining Health and Safety Engineer



IN REPLY REFER TO:

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

P. O. BOX 1716
CARLSBAD, NEW MEXICO 88220

March 24, 1966

REPORT OF EXAMINATION
ALMA MINE
GRANT SHUMWAY
NAVAJO RESERVATION
MONUMENT VALLEY, ARIZONA

URANIUM PERMIT
ARIZONA # 579

by
James W. Hager
Mining Engineer

U. S. DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
BRANCH OF MINING OPERATIONS
CONSERVATION DIVISION

The Alma Mine, located on permit No. 579, was examined March 16, 1966. The mine is located about 15 miles north of Kayenta in the Monument Valley area of Arizona. The writer was accompanied by R. L. Rock, Mining Health and Safety Engineer, U. S. Bureau of Mines. The last inspection of the mine by engineers of this office was February 7, 1966.

On date of examination four men were employed at the mine on a one 8-hour shift a day, 5 days a week basis. All work was confined to the east entry off the slope. A diesel-powered frontend loader was used to load the broken ore. A diesel-powered truck was used to haul the ore out of the mine.

Air entered the mine through four 9-inch drill holes equipped with blowers. Approximately 7,000 cfm of air was being exhausted out the slope. Samples taken to measure the concentration of radon daughter in the mine air showed that the concentration to be within the recommended limits.

The sides of the cut to the portal needed trimming. Mr. Shumway was told that constant attention must be given to the cut so someone won't be caught by a slide. Also the back in the slope should be kept scaled or more timber placed in the locations that showed loose mudstone.

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THE NAVAJO TRIB
MAR 29 1966
MINING DEPT.

The operator had recently purchased about 30 boxes of dynamite from another mine and had stored it in a shop building because their powder magazine was full. He was instructed to remove it at once and either put it in the magazine at the Gabraiter mine or enlarge the magazine at the Alma.

James W. Hager
James W. Hager
Mining Engineer

Orig. to: Supt., Navajo Agency
cc: Comm., Office of Indian Affairs
: Chief, Branch of Mining Operations
: Navajo Tribal Mining Engineer
: Bureau of Mines, Denver
: Files



IN REPLY REFER TO:

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

P. O. BOX 1716
CARLSBAD, NEW MEXICO 88220

February 18, 1966

REPORT OF EXAMINATION
BOOT JACK MINE
AZ MINERALS CORPORATION
NAVAJO RESERVATION
MONUMENT VALLEY, ARIZONA

URANIUM PERMIT
No. 607

by
C. M. McConnell
Deputy Reg. Min. Supv.

U. S. DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
BRANCH OF MINING OPERATIONS
CONSERVATION DIVISION

The Boot Jack mine operated by AZ Minerals Corporation was examined February 7, 1966. A previous examination was made November 11, 1965.

Since the last examination mining has consisted of recovery of pillars and stumps along the drift to the east of the shaft. Most of the work has been confined to a pillar about 700 feet from the shaft station. Presently a cut into a pillar 615 feet from the shaft was being started. The second cut into the pillar showed ore that probed 0.40 percent U_3O_8 in the face. In addition to the mining east of the shaft, two drifts which were connected at the faces were advanced in the back near the face of the west entry. All the ore in this area had been recovered. The cuts were about 50 feet long.

No unsafe practices were noted. Blasting is with powder. The blast holes are too wet to use ammonia nitrate fuel oil mixture successfully. During the time of examination a blast of multiple holes was detonated with a 50 cap blasting machine. It appeared that only one of the holes, which were wired with delay caps went off. After a 30 minute waiting period it was found all of the caps had detonated simultaneously. The writer has no explanation for this.

This office has, as yet, not received any settlement sheets or royalty payment for ore sent to the company's mill at Moab, Utah. Both the Navajo Agency Realty Officer and this office have written the company in regard to this.

RECEIVED
THE NAVAJO TRIBE

FEB 23 1966

MINING DEPT.

There were five men employed on each of three shifts. All the surface building had been completed.

C. M. McConnell
C. M. McConnell
Deputy Regional Mining Supervisor

Orig. to: Supt., Navajo Agency
cc: Comm., Office of Indian Affairs
: Navajo Tribal Mining Engineer
: Chief, Branch of Mining Operations
: Bureau of Mines, Denver
: Arizona State Mine Inspector
: Files



IN REPLY REFER TO:

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
P. O. BOX 1716
CARLSBAD, NEW MEXICO 88220
February 18, 1966

REPORT OF EXAMINATION
ALMA MINE
GRANT SHUMWAY
NAVAJO RESERVATION
MONUMENT VALLEY, ARIZONA

URANIUM PERMIT
ARIZONA # 579
580

BY
C. M. McConnell
Deputy Reg. Min. Supv.
U. S. DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
BRANCH OF MINING OPERATIONS
CONSERVATION DIVISION

The Alma mine, in the Monument Valley Area of the Navajo Reservation was examined February 7, 1966. The last previous examination for which a report was written was made September 21, 1965. The mine site was visited November 11, 1965.

At the time of the visit to the mine on November 11, 1965, a blast in the face had just been detonated and because of the late hour of the day access of the mine could not be completed. However, at that time all the diesel equipment used in the mine was on the surface and an examination of surface facilities showed that one of the three fans was not in operation. The operator was advised not to use the diesel equipment underground until the fan switch had been repaired and the fan put back in circulations. Previous measurements indicated that the operation of all three fans was necessary to supply the amount of air necessary to work the diesel equipment underground.

At the time of the current examination a blast of the face was made shortly after the examination was started. The approved diesel front-end loader was underground and the approved diesel ore truck was taken to the surface at the time of blast. Three fans blowing down 9-inch drill holes were supplying nearly 7,000 cfm of air to the mine. A fourth fan was in place but was not in operation due to another faulty switch.

The smoke from the blast was blown out the portal sufficiently for re-entrance into the mine in about an hour's time. Tests with a CO indicator did not reveal an excess of CO in the atmosphere.

RECEIVED
THE NAVAJO TRIBE

FEB 23 1966

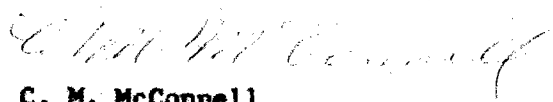
MINING DEPT.

Production is coming from the sight entry off of the slope. No loose or unsupported back was observed in the working area. A prospect drill hole just ahead of the present face was to be reamed to 9-inch diameter and one of the fans relocated over it as soon as the hole was intersected.

Four men were working the mine on a one shift basis each day.

The steep sides of the deep cut outby the portal of the mine continues to be a potential hazard if it should cave and block the entrance. However, with the many large drill holes intersecting the mine there is no eminent danger of men trapped in the mine not being able to survive indefinitely. The great danger is someone being caught by a slide while passing along the entranceway.

During the second quarter of fiscal 1966 there were 990 tons of ore produced with an average grade of 0.19 percent U_3O_8 . This ore had a value of \$14,244 and the royalty paid to the Tribe amounted to \$1,566.85.


C. M. McConnell
Deputy Regional Mining Supervisor

Orig. to: Supt., Navajo Agency
cc: Comm., Office of Indian Affairs
: Chief, Branch of Mining Operations
: Navajo Tribal Mining Engineer
: Arizona State Mine Inspector
: Bureau of Mines, Denver
: Files

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF MINES
Health and Safety Activity

DISTRICT E

1457 Ammons St.
P. O. Box 15037
Lakewood, Colorado 80215

December 17, 1965

File No. 473

Elmer J. Gilstrap, Plant Manager
Houck Pit
Arizona Silica Sand Company
General Delivery
Houck, Arizona

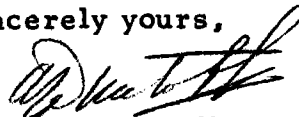
Subject: Health and Safety Inspection Report
R4, Houck Pit
Arizona Silica Sand Company
Houck, Apache County, Arizona

Dear Mr. Gilstrap:

The enclosed report covers a Health and Safety inspection of the above-named pit made in compliance with Order No. 1940, April 4, 1944, by the Secretary of the Interior.

Any comments you desire to make concerning the inspection or report will be appreciated.

Sincerely yours,



A. Z. Dimitroff
Acting District Manager

Enclosures (2)
cc: Area Dir., Bur. of Ind Affairs
Comm. Ind. Affairs
Supt. Navajo Service
Chmn. Navajo Council
Tribal Mining Engineer ✓

RECEIVED
THE NAVAJO TRIBE

DEC 20 1965

MINING DEPT.

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF MINES
HEALTH AND SAFETY ACTIVITY

HEALTH AND SAFETY INSPECTION REPORT
HOUCK PIT
ARIZONA SILICA SAND COMPANY
NAVAJO INDIAN RESERVATION
HOUCK, APACHE COUNTY, ARIZONA

December 9, 1965

By

R. C. Derzay
Mining Health and Safety Engineer

Originating Office - Bureau of Mines
P. O. Box 15037, Lakewood, Colorado 80215
E. W. Felegy, Acting District Manager
Health and Safety District E

HEALTH AND SAFETY INSPECTION REPORT
HOUCK PIT
ARIZONA SILICA SAND COMPANY
NAVAJO INDIAN RESERVATION
HOUCK, APACHE COUNTY, ARIZONA

December 9, 1965

By

R. C. Derzay
Mining Health and Safety Engineer

INTRODUCTION

This report is based on a health and safety inspection made in compliance with Order No. 1940, April 4, 1944, by the Secretary of the Interior authorizing the Bureau of Mines to inspect mines on Indian lands and Government-leased lands on the Public Domain.

The purpose of the inspection and the report is to call to the attention of all concerned the hazards observed in the mine and surface plant during the inspection and to recommend means of correcting these hazards.

The last inspection was made April 13, 1965. The recommendation repeated from the last report is indicated by an asterisk.

GENERAL INFORMATION

The office of the Arizona Silica Sand Company was at the washing and screening plant about $1\frac{1}{2}$ miles south of U. S. Highway 66 at Houck, Arizona, about 33 miles west of Gallup, New Mexico. The pit was reached by driving 1.4 miles west of the Houck turnoff on U. S. Highway 66, turning northwesterly at the Pine Springs turnoff and driving 3 miles westerly on an abandoned portion of U.S. Highway 66. The second dirt road west of the Querino Canyon bridge led to the pit.

Elmer Gilstrap was manager of the mine and plant. The open pit sand mine was worked 4 days a week, single shift. The crew consisted of the loader operator and two truck drivers. Maintenance and repair work was done each Monday.

SURFACE

The sand was overlain by a few inches to a few feet of dirt which was stripped off. The pit walls were generally less than 10 feet high; in a few areas the walls were about 25 feet high. A rubber-tire, diesel-powered front-end loader was used to load the sand into the trucks. The floor of the pits were relatively smooth and level, permitting safe and easy access for the equipment.

GENERAL HEALTH AND SAFETY

First-aid supplies were kept at the office. No one at the operation had been trained in first-aid methods.

RECOMMENDATIONS

Surface

Pit walls should be kept trimmed to prevent the possibility of the loader operator or anyone else from being buried by a sudden sloughing of the walls.

General Health and Safety

*Key personnel should be trained in first-aid methods.

ACKNOWLEDGMENT

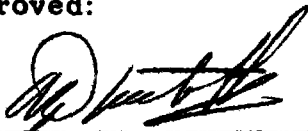
The cooperation of company officials and employees during this inspection is gratefully acknowledged.

Respectfully submitted,

/s/ R. C. Derzay

R. C. Derzay
Mining Health and Safety Engineer

Approved:



A. Z. Dimitroff
Acting District Manager

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF MINES
HEALTH AND SAFETY ACTIVITY

HEALTH AND SAFETY INSPECTION REPORT
HOUCK PIT
ARIZONA SILICA SAND COMPANY
NAVAJO INDIAN RESERVATION
HOUCK, APACHE COUNTY, ARIZONA

December 9, 1965

By

R. C. Derzay
Mining Health and Safety Engineer

Originating Office - Bureau of Mines
P. O. Box 15037, Lakewood, Colorado 80215
E. W. Felegy, Acting District Manager
Health and Safety District E

HEALTH AND SAFETY INSPECTION REPORT
HOUCK PIT
ARIZONA SILICA SAND COMPANY
NAVAJO INDIAN RESERVATION
HOUCK, APACHE COUNTY, ARIZONA

December 9, 1965

By

R. C. Derzay
Mining Health and Safety Engineer

INTRODUCTION

This report is based on a health and safety inspection made in compliance with Order No. 1940, April 4, 1944, by the Secretary of the Interior authorizing the Bureau of Mines to inspect mines on Indian lands and Government-leased lands on the Public Domain.

The purpose of the inspection and the report is to call to the attention of all concerned the hazards observed in the mine and surface plant during the inspection and to recommend means of correcting these hazards.

The last inspection was made April 13, 1965. The recommendation repeated from the last report is indicated by an asterisk.

GENERAL INFORMATION

The office of the Arizona Silica Sand Company was at the washing and screening plant about $1\frac{1}{2}$ miles south of U. S. Highway 66 at Houck, Arizona, about 33 miles west of Gallup, New Mexico. The pit was reached by driving 1.4 miles west of the Houck turnoff on U. S. Highway 66, turning northwesterly at the Pine Springs turnoff and driving 3 miles westerly on an abandoned portion of U.S. Highway 66. The second dirt road west of the Querino Canyon bridge led to the pit.

Elmer Gilstrap was manager of the mine and plant. The open pit sand mine was worked 4 days a week, single shift. The crew consisted of the loader operator and two truck drivers. Maintenance and repair work was done each Monday.

SURFACE

The sand was overlain by a few inches to a few feet of dirt which was stripped off. The pit walls were generally less than 10 feet high; in a few areas the walls were about 25 feet high. A rubber-tire, diesel-powered front-end loader was used to load the sand into the trucks. The floor of the pits were relatively smooth and level, permitting safe and easy access for the equipment.

GENERAL HEALTH AND SAFETY

First-aid supplies were kept at the office. No one at the operation had been trained in first-aid methods.

RECOMMENDATIONS

Surface

Pit walls should be kept trimmed to prevent the possibility of the loader operator or anyone else from being buried by a sudden sloughing of the walls.

General Health and Safety

*Key personnel should be trained in first-aid methods.

ACKNOWLEDGMENT

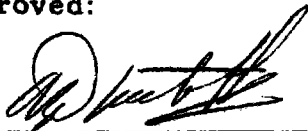
The cooperation of company officials and employees during this inspection is gratefully acknowledged.

Respectfully submitted,

/s/ R. C. Derzay

R. C. Derzay
Mining Health and Safety Engineer

Approved:



A. Z. Dimitroff
Acting District Manager



IN REPLY REFER TO:

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

P. O. BOX 1716
CARLSBAD, NEW MEXICO 88220

December 1, 1965

REPORT OF EXAMINATION
SAND & GRAVEL PERMIT
NAVAJO RESERVATION
ALLISON & HANEY
SAN JUAN COUNTY, NEW MEXICO

SAND & GRAVEL
14-20-603-6173

by
Lawrence E. Gordon
Mining Inspector

U. S. DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
BRANCH OF MINING OPERATIONS
CONSERVATION DIVISION

RECEIVED
THE NAVAJO TRIBE
DEC 6 1965

MINING DEPT.

On November 16, 1965, the writer and T. C. Lukins, Health and Safety Engineer, U. S. Bureau of Mines, accompanied by Wayne Purcelle, company employee, made an examination of sand and gravel permit 14-20-603-6173. The permit was issued effective November 30, 1960, for the period ending November 30, 1965. Allison and Haney, Inc., operate the business selling sand and gravel products and ready-mix concrete from the facilities located about 2 miles north of Shiprock, New Mexico, on the east side of U. S. Highway 666.

During the normal course of the operation 5 men are employed on a single shift 5 days a week. However, the plant was idle on the date of this examination but several men were repairing the equipment during the shutdown period.

The plant consists of crushing, screening, and washing facilities, where various sized products are produced. The products are stockpiled according to size, sent to the concrete batch plant or loaded into trucks for direct sales. Presently, there are two stockpiles one for coarse material and one for sand.

Generally the equipment appeared to be in a safe condition and house-keeping around the plant and shop was good. Several minor safety hazards were found and pointed out to Mr. Purcelle who will see that they are corrected before the plant resumes operation. The safety hazard found during the previous examination on April 13, 1965, by the U. S. Bureau of Mines, had been corrected.

Orig. to: Supt., Navajo Agency
cc: Comm., Office of Ind. Affairs
: Navajo Tribal Mining Engineer
: Chief, Branch of Mining Operations
: Files
: Bureau of Mines, Denver

Lawrence E. Gordon
Lawrence E. Gordon
Mining Inspector



UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF MINES

1457 AMMONS STREET
POST OFFICE BOX 15037
LAKEWOOD, COLORADO 80215

November 28, 1969

File No. 173

Allison and Hancy Co.
P. O. Box 107
Shiprock, New Mexico

Subject: Health and Safety Inspection Report
Allison and Hancy and E. Leavel Ltd
Allison and Hancy Company
Navajo Indian Reservation
Shiprock, San Juan County, New Mexico

Gentlemen:

The enclosed report covers a health and safety inspection of the above-named operation made in compliance with Order No. 1740, by the Secretary of the Interior.

Any comments you desire to make concerning the inspection or report will be appreciated.

Sincerely yours,

A. C. Moschetti

A. C. Moschetti
Acting District Manager

Enclosure

cc: Commr. Ind. Affairs
Area Dir., Bur. Ind. Affairs
Supt., Navajo Service
Chairman, Navajo Council
✓ Tribal Mining Engineer

R4
ID 41461-29-021-14411
Permit No. 14-20-603-6173

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF MINES
HEALTH AND SAFETY ACTIVITY

HEALTH AND SAFETY INSPECTION REPORT
ALLISON AND HANEY SAND AND GRAVEL PIT
ALLISON AND HANEY COMPANY
NAVAJO INDIAN RESERVATION
SHIPROCK, SAN JUAN COUNTY, NEW MEXICO

November 17, 1965

By

T. C. Lukins
Mining Health and Safety Engineer

Originating Office - Bureau of Mines
P. O. Box 15037, Lakewood, Colorado 80215
E. W. Felegy, Acting District Manager
Health and Safety District E

HEALTH AND SAFETY INSPECTION REPORT
ALLISON AND HANEY SAND AND GRAVEL PIT
ALLISON AND HANEY COMPANY
NAVAJO INDIAN RESERVATION
SHIPROCK, SAN JUAN COUNTY, NEW MEXICO

November 17, 1965

By

T. C. Lukins
Mining Health and Safety Engineer

INTRODUCTION

This report is based on a health and safety inspection made in compliance with Order No. 1940, April 4, 1944, by the Secretary of the Interior authorizing the Bureau of Mines to inspect mines on Indian Lands and Government-leased lands on the Public Domain.

The purpose of the inspection and the report is to call to the attention of all concerned the hazards observed in the mine and surface plant during the inspection and to recommend means of correcting these hazards.

Safety improvements made since the last inspection April 13, 1965, are listed in this report.

GENERAL INFORMATION

The Allison and Haney sand and gravel pit and plant facilities are 2 miles north of Shiprock, New Mexico, just east of U. S. Highway 666. The company mailing address was P. O. Box 637, Shiprock. The following persons accompanied the writer during all parts of this inspection and recommendations were discussed with them:

Wayne Purcella, sand and gravel operator
Earl Gordon, engineer technician, Geological Survey

Five men worked one 8-hour shift a day, 5 days a week.

The crushing and screening plant which produced sized material was down for repairs at the time of the inspection. The washing and screening plant was also shut down and any sized material needed was loaded from the existing stockpiles.

SURFACE

The two ladders being used in the repair work at the crushing and screening plant were broken and needed replacing.

The shaker drive which required guarding during the previous inspection had been removed and was not in use at this time.

FIRE HAZARDS AND FIRE FIGHTING EQUIPMENT

The oil storage area in the repair shop was not provided with a "No Smoking" sign.

The liquified petroleum gas tank next to the trailer house was not guarded against the possibility of a vehicle backing into it.

The compressed gas cylinder outside the main office and scale building was not securely mounted nor guarded against vehicular contact.

GROUND CONTROL

Small children occasionally play around the stockpiles of sand. These piles were not trimmed or shaped so as to prevent the sand from sloughing and possibly suffocating anyone.

GENERAL HEALTH AND SAFETY

A compressed gas cylinder at the repair shop and main office building was not secured from accidental upset.

The electric-powered grinder in the repair shop was not provided with a tool rest.

There had been no lost-time injuries since the previous inspection.

SAFETY IMPROVEMENTS

The following safety improvement was made since the previous report.

Electricity

The control box to the feeder belt drive at the sand washing plant had been frame grounded.

RECOMMENDATIONS

Surface

The two broken ladders being used for repair work should be replaced with new ones.

Fire Hazards and Fire-Fighting Equipment

The oil storage area in the repair shop should be provided with a "No Smoking" sign.

The liquified petroleum gas tank next to the trailer house should be provided with a guard adequate to prevent any vehicle from backing into it.

The compressed gas cylinder outside the main office building should be securely mounted and guarded against vehicular contact.

Ground Control

The near vertical banks of the stockpiles of sand should be kept trimmed or sloped to prevent sloughing.

General Health and Safety


Compressed gas cylinders not in use should be secured from accidental upset.

The electric-powered grinder in the repair shop should be provided with a tool rest.

ACKNOWLEDGMENT

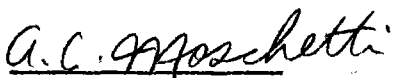
The cooperation of Wayne Purcella and employees during this inspection is gratefully acknowledged.

Respectfully submitted,


T. C. Lukins

Mining Health and Safety Engineer

Approved:


A. C. Moschetti
Acting District Manager



IN REPLY REFER TO:

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

P. O. BOX 1716
CARLSBAD, NEW MEXICO 88220
November 23, 1965

REPORT OF EXAMINATION
ARIZONA SILICA SAND
HOUCK, ARIZONA
NAVAJO RESERVATION

SAND & GRAVEL
PERMIT ARIZONA
14-20-0603-6405

by
C. M. McConnell
Deputy Regional Min. Supv.

RECEIVED
THE NAVAJO TRIBE

NOV 29 1965

MINING DEPT.

U. S. DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
BRANCH OF MINING OPERATIONS
CONSERVATION DIVISION

The Arizona Silica Sand Company pit located on the Navajo Reservation in Section 29, T. 22 N., R. 29 E., G&SRM, was examined November 15, 1965. The last examination for which a report was written was made December 15, 1964.

The permit was issued April 7, 1961, for the period ending April 7, 1965. By letter dated August 2, 1965 the permit was renewed for an additional term ending April 7, 1966, by the General Superintendent, Navajo Agency. The permit was renewed for the additional term on the basis of continuous production and payment of advance minimum royalty.

There was no production on day of examination, Monday, as that day is set aside each week for maintenance of equipment. All the mobile equipment at the pit is brought into the plant site each week-end on account of possible vandalism.

Pit walls were sloped and no overhanging or vertical walls were observed. Roads were well maintained.

The operator stated that business had been exceptional good during the past three or four months. The material a round grain sand is used principally for sand fracking of oil wells. A large portion of the production is sold in the Four Corners area. Recently, markets in California have been available to the company. The manager, Mr. Gilstrap, stated that it was anticipated that there would be as much oil and gas drilling in the Four Corners area during the next five years as has been done to date.

Orig. to: Supt., Navajo Agency
cc: Comm., Office of Ind. Affairs
: Navajo Tribal Mining Engineer
: Chief, Branch of Mining Operations
: Files

C. M. McConnell
C. M. McConnell
Deputy Regional Min. Supv.



IN REPLY REFER TO:

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

P. O. BOX 1716
CARLSBAD, NEW MEXICO 88220

November 19, 1965

REPORT OF EXAMINATION
BOOT JACK MINE
AZ MINERALS CORPORATION
NAVAJO RESERVATION
MONUMENT VALLEY, ARIZONA

URANIUM PERMIT
No. 607

by
C. M. McConnell
Deputy Regional Mining Supv.

U. S. DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
BRANCH OF MINING OPERATIONS
CONSERVATION DIVISION

The Boot Jack mine operated by AZ Minerals Corporation was examined November 11, 1965. A previous examination was made September 21, 1965.

Since the last examination the cage and skip have been installed in the shaft. The cage is provided with a bonnet and doors and a safety latch to the main hoisting rope. The installation of the 30-inch metal conduit to the bottom of the shaft had been completed and a fan installed at the surface for the ventilation of the mine. The 30-inch pipe was connected at the shaft station to a T and 16-inch flexible tubing extended in both directions along the drift.

Drilling and probing along the drift walls and pillars has revealed very little ore of more than 0.20 percent grade. Only one spot near the back along the formerly stoped area is ore of high grade and this is in an area of broken ground. The ore probes about 3 percent U_3O_8 . A program of long holing along the drift is to be started.

The company has done additional surface drilling in the area of the indicated ore zone southwest of the shaft. Old drill holes have also been washed out and probed. Only one hole reveals ore of any value. No decision has yet been made to drift out to this ore body, a distance of 1,200 feet from the shaft.

No settlement sheets have as yet been received but the management stated that about 300 tons of ore averaging 0.15 percent U_3O_8 had

been shipped to the company mill at Moab, Utah.

Surface installations consisting of a shop, hoisthouse, generator room, and dry room with showers and baskets were all nearly completed. Trailors had been set in place for living quarters.

C. M. McConnell

C. M. McConnell
Deputy Regional Mining Supervisor

Orig. to: Supt., Navajo Agency
cc: Comm., Office of Indian Affairs
; Navajo Tribal Mining Engineer
: Chief, Branch of Mining Operations
: Bureau of Mines, Denver
: Arizona State Mine Inspector
: Files

RECEIVED
THE NAVAJO TRIBE
NOV 29 1965
MINING DEPT.

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF MINES
HEALTH AND SAFETY ACTIVITY

HEALTH AND SAFETY INSPECTION REPORT
ALMA MINE (URANIUM)
GRANT SHUMWAY
NAVAJO INDIAN RESERVATION
KAYENTA, NAVAJO COUNTY, ARIZONA

September 2, 1965

By

R. C. Derzay
Mining Health and Safety Engineer

Originating Office - Bureau of Mines
P. O. Box 15037, Lakewood, Colorado 80215
E. W. Felegy, Acting District Manager
Health and Safety District E

HEALTH AND SAFETY INSPECTION REPORT
ALMA MINE (URANIUM)
GRANT SHUMWAY
NAVAJO INDIAN RESERVATION
KAYENTA, NAVAJO COUNTY, ARIZONA

September 2, 1965

By

R. C. Derzay
Mining Health and Safety Engineer

INTRODUCTION

This report is based on a health and safety inspection made in compliance with Order No. 1940, April 4, 1944, by the Secretary of the Interior authorizing the Bureau of Mines to inspect mines on Indian lands and Government-leased lands on the Public Domain.

The purpose of the inspection and the report is to call to the attention of all concerned the hazards observed in the mine and surface plant during the inspection and to recommend means of correcting these hazards.

Safety improvements made since the last inspection, April 27, 1965, are listed in this report. Recommendations repeated from the last report are indicated by asterisks.

GENERAL INFORMATION

The Alma underground uranium mine is 15 miles north of Kayenta, Arizona. The mine can be reached by driving north from Kayenta on State Highway 464 to the first dirt road going west after milepost 408, and then traveling west on this road about $\frac{1}{2}$ mile.

The mine was operated normally by two men working one shift a day, alternately 5 and 6 days a week. At the time of inspection, two additional men were operating a surface drill rig.

An 11-degree incline, 700 feet long provided access to the mine. Two drifts had been driven from the bottom of the incline. The west drift was no longer being advanced. Work was in progress in the east drift which was 200 feet long.

The sandstone host rock was wet.

SURFACE

The engine exhaust stack on the compressor terminated only a few feet from the air inlets.

FIRE HAZARDS AND FIRE-FIGHTING EQUIPMENT

Diesel and L-P gas storage tanks which provided fuel for the compressor and generating plant were not posted conspicuously with "No Smoking" signs. Other fuel tanks had been posted. Fuel tanks in the compressor-generating area were within about 30 feet of the ventilation holes; the area around these tanks was not ditched to drain the contents of the tanks away from the ventilation holes in the event of tank rupture.

STORAGE AND USE OF EXPLOSIVES

A door which was kept locked had been provided for the explosives magazine. The door, however, was not bullet resistant.

Neither misfires nor undetonated dynamite were noted.

LOADING, HAULING AND DRILLING

Two jackleg drills were used; water was used when collaring and drilling.

Broken rock was loaded into a diesel-powered truck by a diesel-powered front-end loader. The truck bore a U. S. Bureau of Mines approval plate but the loader did not; consequently, no action during this inspection shall be interpreted as official approval of this equipment.

GROUND CONTROL

A few pieces of loose back were noted near the heading and in the incline. A scaling bar was available.

VENTILATION

The mine was ventilated by 2,000 cfm of air blown down two drill holes, one of which intersected the east drift about 50 feet from the breast and the other near the incline bottom.

Ventilation was adequate for the operations being conducted at the time of the inspection.

The fans were on the surface. One fan was driven by an electric motor and the other by an internal combustion engine. The latter drive was not guarded. Air inlets on the fans were guarded.

RADIATION

The radon-daughter concentration near the east heading was sampled and found to be 0.9 working level. The sample was collected at 11:45 a.m. during the drilling cycle while two men each were operating a drill.

The men's full-shift exposure to radon daughters was well below the recommended maximum safe concentration.

QUALITY OF AIR

Direct reading field test instruments were used to measure CO (carbon monoxide) and NO₂ (nitrogen dioxide) concentrations in the mine air during this inspection.

In addition, a mine air sample was collected in a vacuum bottle during the inspection and was analyzed in the Bureau of Mines laboratory, Denver, Colorado.

Both field test and laboratory analytical results are shown in table 1.

Table 1

Sample No.	Place, time	P e r c e n t					Ppm*
		O ₂	CO ₂	CO	CH ₄	N ₂	NO ₂
	East drift, 11:44 a.m.			nil			nil
X-9451	East drift, 11:45 a.m.	20.81	0.09		0.00	79.10	

*Parts per million

Air for ventilation is considered to be of satisfactory quality when it contains at least 19.5 percent O₂ (oxygen), not more than 0.5 percent CO₂ (carbon dioxide), and no harmful quantities of dust or noxious gases. The threshold limit value for CO is 0.01 percent and for NO₂ is 5 parts per million.

The results listed in table 1 indicate that the air was of satisfactory quality with respect to these gases at the times and places shown.

GENERAL HEALTH AND SAFETY

The men wore hard hats and safety-toed boots. Electric cap lamps were used for underground illumination.

A stretcher and first-aid supplies were available.

SAFETY IMPROVEMENTS

Fire Hazards and Fire-Fighting Equipment

The 500-gallon tank of diesel fuel had been moved away from the incline.

The gasoline tank had been moved back from the edge of the road.

The leak in the hose connection to the gasoline tank had been repaired.

Each unit of diesel equipment used underground was provided with a fire extinguisher.

Storage and Use of Explosives

The magazine was provided with a locked door.

The magazine was posted warning of explosives.

The AN-FO had been removed from the shop.

Extraneous materials were not stored with the explosives.

A separate magazine was provided for the storage of the blasting caps.

Dynamite was not brought into the shop.

Primers were made underground just prior to charging the holes.

Loading, Hauling and Drilling

The mobile equipment was provided with audible warning devices.

The front-end loader was equipped with a scrubber.

General Health and Safety

First-aid supplies were kept available.

RECOMMENDATIONS

Surface

* The exhaust pipe from the compressor engine should be extended at least 3 feet.

Fire Hazards and Fire-Fighting Equipment

* All fuel tanks should be posted with "No Smoking" signs which can be seen readily.

* The area around each tank in the compressor-fan-generating plant area should be ditched to drain the contents of the tanks away from the vent holes in the event of tank rupture and subsequent fire.

Storage and Use of Explosives

* The magazine door should be made bullet resistant.

Loading, Hauling and Drilling

During this inspection no hazard was observed in underground working environments due to the use of nonapproved diesel equipment. However, only Bureau of Mines approved 1/ mobile diesel-powered equipment should be used underground. Bureau of Mines approved equipment should be used to replace or add to the mobile diesel-powered equipment now in use underground when replacement of present, or additional equipment is necessary.

Ground Control

* All loose, unsupported rock should be either scaled down or adequately supported.

Ventilation

* The belt drive on the fan should be guarded.

Ventilation tubing should be extended to within 30 feet of the heading.

1/ Bureau of Mines approvals for mobile diesel-powered equipment are issued only after application to and tests by the Branch of Electrical-Mechanical Testing, Bureau of Mines, Pittsburgh, Pennsylvania, 15213. Approved equipment is identified by a Bureau of Mines approval plate attached to each complete unit.

ACKNOWLEDGMENT

The cooperation of mine officials and employees during this inspection is gratefully acknowledged.

Respectfully submitted,

R.C. Derzay

R. C. Derzay
Mining Health and Safety Engineer

Approved:

E. W. Felegy

E. W. Felegy
Acting District Manager

October 26, 1965

REPORT OF EXAMINATION
ALMA MINE
GRANT SHIMWAY
NAVAJO RESERVATION
MONUMENT VALLEY, ARIZONA

URANIUM PERMIT
Arizona # 579

by
C. M. McConnell
Deputy Regional Mining Super.

U. S. DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
BRANCH OF MINING OPERATIONS
CONSERVATION DIVISION

The Alma mine, located on Mining Permit No. 579 in the west Monument Valley area of the Navajo Indian Reservation, was examined September 21, 1965. A previous examination was made July 16, 1965. The writer was accompanied on the examination by Anthony Bennett, Arizona State Mine Dust and Ventilation Engineer, and R. C. Derray, Mining Health and Safety Engineer, U. S. Bureau of Mines.

At the time of examination there was no production and the operators were sloping the deep open cut at the portal which had shown signs of caving during and due to recent wet weather.

Previous to the date of the examination the Arizona State Mine Inspector's office had correspondence with the lessee in regard to applying for permission and the use of diesel equipment underground. Arizona mining code requires written permission from the State Mine Inspector and U. S. Bureau of Mines approval. An approved diesel shuttle car and an unapproved front end loader are used underground in this mine.

By letter dated September 29, 1965 Mr. Bennett advised the lessee the mine was closed down until he had permission to use the equipment. In conversation with Mr. Bennett on October 15, 1965 it was learned that the lessee had received permission to use both pieces of equipment underground and that an examination of the mine on October 14 had revealed that 7,000 cfm of air was being coursed through the mine from three fans located on the surface and blowing through drill holes reamed to 9-inch diameter. Test of the ventilating current did not reveal any harmful gases.

RECEIVED
THE NAVAJO TRIBE

OCT 29 1965

MINING DEPT.

Settlement sheets for five lots containing 855 tons of ore shipped during the past quarter showed 0.2434% U_3O_8 , with a royalty value of \$17,199.49 and royalty to the tribe of \$2,063.94.

The conditions described by the State Inspector will be confirmed during the coming month.

C. M. McConnell

C. M. McConnell
Deputy Regional Mining Supervisor

CMmc:ep

Orig. to: Supt., Navajo Agency
cc: Comm., Office of Indian Affairs
: Chief, Branch of Mining Operations
: Navajo Tribal Mining Engineer
: Arizona State Mine Inspector
: Bureau of Mines, Denver
: Files

October 26, 1965

REPORT OF EXAMINATION
BOOT JACK MINE
AZ MINERALS CORPORATION
NAVAJO RESERVATION
MONUMENT VALLEY, ARIZONA

URANIUM PERMIT
ARIZONA 607

By
C. M. McConnell
Deputy Regional Mining Super.

U. S. DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
BRANCH OF MINING OPERATIONS
CONSERVATION DIVISION

The Boot Jack mine, operated by AZ Minerals Corporation (Atlas) and located on the Navajo Indian Reservation in the western part of Monument Valley was examined September 21, 1965. A previous examination was made July 21, 1965.

The writer was accompanied by Anthony Bennett, Arizona State Mine Dust and Ventilation Engineer and Marshall J. Fletcher, mine manager.

At the time of examination, work toward starting operation in the shaft and at the shaft station was in progress. Three-foot-diameter metal pipe for ventilation was being installed in the service compartment of the shaft, along with compressed air lines and a permanent water line from the underground pump. The cage and skip for the shaft had not arrived at the property as yet.

Examination of the old workings of the mine in the vicinity of the shaft showed the original pillars in place and no movement of the back or extra weight on the pillars.

A radon daughter sample taken on the 400 level several hundred feet from the shaft station showed 2xWL. It can be expected that when the ventilating current is established the concentration can be kept below the 1xWL.

The operators plan to start a drift from the south end of the mine near the shaft station in a southwest direction to an indicated ore body drilled out about 1,200 feet distant by the former lessees, Gibraltar Minerals Corporation.

A single drum hoist had been installed and the steel headframe erected. Only a single skip will be used to hoist ore.

RECEIVED
THE NAVAJO TRIBE

OCT 29 1965

MINING DEPT.

Surface facilities were near completion with shop, warehouse, and change house covered with fire resistant material. Living quarters were yet to be completed.

No Powder had as yet been delivered to the property. Fire extinguishers and first aid supplies were on hand.

C. M. McConnell

CMC:ep

C. M. McConnell
Deputy Regional Mining Supervisor

Orig. to: Supt., Navajo Agency
cc: Comm., Office of Indian Affairs
: Chief, Branch of Mining Operations
: Navajo Tribal Mining Engineer
: Arizona State Mine Inspector
: Bureau of Mines, Denver
: Files



DISTRICT E

**UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF MINES
Health and Safety Activity**

1457 AMMONS STREET
POST OFFICE BOX 15037
LAKEWOOD, COLORADO 80215

September 24, 1965

File No. #437.2

**Grant Shumway
Blanding, Utah**

**Subject: Health and Safety Inspection Report
Alma Mine
Grant Shumway
Kayenta, Navajo County, Arizona**

Dear Mr. Shumway:

The enclosed report covers a health and safety inspection of the above-named mine made in compliance with Order No. 1940, April 4, 1944, by the Secretary of the Interior.

Any comments you desire to make concerning the inspection or report will be appreciated.

Sincerely yours,

E. W. Felegy

**E. W. Felegy
Acting District Manager**

Enclosures (2)
cc: James Westfield
Roy V. Hersey
R. S. Fulton
J. D. Turner
E. A. Morgan
Commr. of Ind. Aff.
Area Dir., Bur. of Ind. Aff.
Supt., Navajo Service
Chairman, Navajo Council
Tribal Mining Engineer
Files: Subj
Chron

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF MINES
HEALTH AND SAFETY ACTIVITY

HEALTH AND SAFETY INSPECTION REPORT
ALMA MINE (URANIUM)
GRANT SHUMWAY
NAVAJO INDIAN RESERVATION
KAYENTA, NAVAJO COUNTY, ARIZONA

September 2, 1965

By

R. C. Derzay
Mining Health and Safety Engineer

Originating Office - Bureau of Mines
P. O. Box 15037, Lakewood, Colorado 80215
E. W. Felegy, Acting District Manager
Health and Safety District E

HEALTH AND SAFETY INSPECTION REPORT
ALMA MINE (URANIUM)
GRANT SHUMWAY
NAVAJO INDIAN RESERVATION
KAYENTA, NAVAJO COUNTY, ARIZONA

September 2, 1965

By

R. C. Derzay
Mining Health and Safety Engineer

INTRODUCTION

This report is based on a health and safety inspection made in compliance with Order No. 1940, April 4, 1944, by the Secretary of the Interior authorizing the Bureau of Mines to inspect mines on Indian lands and Government-leased lands on the Public Domain.

The purpose of the inspection and the report is to call to the attention of all concerned the hazards observed in the mine and surface plant during the inspection and to recommend means of correcting these hazards.

Safety improvements made since the last inspection, April 27, 1965, are listed in this report. Recommendations repeated from the last report are indicated by asterisks.

GENERAL INFORMATION

The Alma underground uranium mine is 15 miles north of Kayenta, Arizona. The mine can be reached by driving north from Kayenta on State Highway 464 to the first dirt road going west after milepost 408, and then traveling west on this road about $\frac{1}{2}$ mile.

The mine was operated normally by two men working one shift a day, alternately 5 and 6 days a week. At the time of inspection, two additional men were operating a surface drill rig.

An 11-degree incline, 700 feet long provided access to the mine. Two drifts had been driven from the bottom of the incline. The west drift was no longer being advanced. Work was in progress in the east drift which was 200 feet long.

The sandstone host rock was wet.

SURFACE

The engine exhaust stack on the compressor terminated only a few feet from the air inlets.

FIRE HAZARDS AND FIRE-FIGHTING EQUIPMENT

Diesel and L-P gas storage tanks which provided fuel for the compressor and generating plant were not posted conspicuously with "No Smoking" signs. Other fuel tanks had been posted. Fuel tanks in the compressor-generating area were within about 30 feet of the ventilation holes; the area around these tanks was not ditched to drain the contents of the tanks away from the ventilation holes in the event of tank rupture.

STORAGE AND USE OF EXPLOSIVES

A door which was kept locked had been provided for the explosives magazine. The door, however, was not bullet resistant.

Neither misfires nor undetonated dynamite were noted.

LOADING, HAULING AND DRILLING

Two jackleg drills were used; water was used when collaring and drilling.

Broken rock was loaded into a diesel-powered truck by a diesel-powered front-end loader. The truck bore a U. S. Bureau of Mines approval plate but the loader did not; consequently, no action during this inspection shall be interpreted as official approval of this equipment.

GROUND CONTROL

A few pieces of loose back were noted near the heading and in the incline. A scaling bar was available.

VENTILATION

The mine was ventilated by 2,000 cfm of air blown down two drill holes, one of which intersected the east drift about 30 feet from the breast and the other near the incline bottom.

Ventilation was adequate for the operations being conducted at the time of the inspection.

The fans were on the surface. One fan was driven by an electric motor and the other by an internal combustion engine. The latter drive was not guarded. Air inlets on the fans were guarded.

RADIATION

The radon-daughter concentration near the east heading was sampled and found to be 0.9 working level. The sample was collected at 11:45 a.m. during the drilling cycle while two men each were operating a drill.

The men's full-shift exposure to radon daughters was well below the recommended maximum safe concentration.

QUALITY OF AIR

Direct reading field test instruments were used to measure CO (carbon monoxide) and NO₂ (nitrogen dioxide) concentrations in the mine air during this inspection.

In addition, a mine air sample was collected in a vacuum bottle during the inspection and was analyzed in the Bureau of Mines laboratory, Denver, Colorado.

Both field test and laboratory analytical results are shown in table 1.

Table 1

Sample No.	Place, time	P e r c e n t					Ppm* NO ₂
		O ₂	CO ₂	CO	CH ₄	N ₂	
	East drift, 11:44 a.m.			nil			nil
X-9451	East drift, 11:45 a.m.	20.81	0.09		0.00	79.10	

*Parts per million

Air for ventilation is considered to be of satisfactory quality when it contains at least 19.5 percent O₂ (oxygen), not more than 0.5 percent CO₂ (carbon dioxide), and no harmful quantities of dust or noxious gases. The threshold limit value for CO is 0.01 percent and for NO₂ is 5 parts per million.

The results listed in table 1 indicate that the air was of satisfactory quality with respect to these gases at the times and places shown.

GENERAL HEALTH AND SAFETY

The men wore hard hats and safety-toed boots. Electric cap lamps were used for underground illumination.

A stretcher and first-aid supplies were available.

SAFETY IMPROVEMENTS

Fire Hazards and Fire-Fighting Equipment

The 500-gallon tank of diesel fuel had been moved away from the incline.

The gasoline tank had been moved back from the edge of the road.

The leak in the hose connection to the gasoline tank had been repaired.

Each unit of diesel equipment used underground was provided with a fire extinguisher.

Storage and Use of Explosives

The magazine was provided with a locked door.

The magazine was posted warning of explosives.

The AN-FO had been removed from the shop.

Extraneous materials were not stored with the explosives.

A separate magazine was provided for the storage of the blasting caps.

Dynamite was not brought into the shop.

Primers were made underground just prior to charging the holes.

Loading, Hauling and Drilling

The mobile equipment was provided with audible warning devices.

The front-end loader was equipped with a scrubber.

General Health and Safety

First-aid supplies were kept available.

RECOMMENDATIONS

Surface

* The exhaust pipe from the compressor engine should be extended at least 3 feet.

Fire Hazards and Fire-Fighting Equipment

* All fuel tanks should be posted with "No Smoking" signs which can be seen readily.

* The area around each tank in the compressor-fan-generating plant area should be ditched to drain the contents of the tanks away from the vent holes in the event of tank rupture and subsequent fire.

Storage and Use of Explosives

* The magazine door should be made bullet resistant.

Loading, Hauling and Drilling

During this inspection no hazard was observed in underground working environments due to the use of nonapproved diesel equipment. However, only Bureau of Mines approved ^{1/} mobile diesel-powered equipment should be used underground. Bureau of Mines approved equipment should be used to replace or add to the mobile diesel-powered equipment now in use underground when replacement of present, or additional equipment is necessary.

Ground Control

* All loose, unsupported rock should be either scaled down or adequately supported.

Ventilation

* The belt drive on the fan should be guarded.

Ventilation tubing should be extended to within 30 feet of the heading.

^{1/} Bureau of Mines approvals for mobile diesel-powered equipment are issued only after application to and tests by the Branch of Electrical-Mechanical Testing, Bureau of Mines, Pittsburgh, Pennsylvania, 15213. Approved equipment is identified by a Bureau of Mines approval plate attached to each complete unit.

ACKNOWLEDGMENT

The cooperation of mine officials and employees during this inspection is gratefully acknowledged.

Respectfully submitted,

R. C. Derzay

R. C. Derzay
Mining Health and Safety Engineer

Approved:

E. W. Felegy

E. W. Felegy
Acting District Manager



District E

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF MINES
Health and Safety Activity

1457 AMMONS STREET
POST OFFICE BOX 15037
LAKEWOOD, COLORADO 80215

September 14, 1965

File No. #437.2

S. E. Craig
General Mine Superintendent
AZ Minerals Corporation
Big Indian Mines
Moab, Utah

Subject: Health and Safety Inspection Report
Boot Jack mine
AZ Minerals Corporation
Kayenta, Navajo County, Arizona

Dear Mr. Craig:

The enclosed report covers a health and safety inspection of the above-named mine made in compliance with Order No. 1940, April 4, 1944, by the Secretary of the Interior.

Any comments you desire to make concerning the inspection or report will be appreciated.

Sincerely yours,

E. W. Felegy

E. W. Felegy
Acting District Manager

Enclosures

cc: Commr. of Indian Affairs
Area Dir., Bur. of Indian Affairs
Supt. Navajo Service
Chairman, Navajo Council
Tribal Mining Engineer✓

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THE NAVAJO TRIBE

SEP 17 1965

MINING DEPT.

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF MINES
HEALTH AND SAFETY ACTIVITY

HEALTH AND SAFETY INSPECTION REPORT
BOOT JACK MINE (URANIUM)
AZ MINERALS CORPORATION
NAVAJO INDIAN RESERVATION
KAYENTA, NAVAJO COUNTY, ARIZONA

August 31, 1965

By

R. C. Derzay
Mining Health and Safety Engineer

Originating Office - Bureau of Mines
P. O. Box 15037, Lakewood, Colorado 80215
E. W. Felegy, Acting District Manager
Health and Safety District E

HEALTH AND SAFETY INSPECTION REPORT
BOOT JACK MINE (URANIUM)
AZ MINERALS CORPORATION
NAVAJO INDIAN RESERVATION
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August 31, 1965

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The purpose of the inspection and the report is to call to the attention of all concerned the hazards observed in the mine and surface plant during the inspection and to recommend means of correcting these hazards.

GENERAL INFORMATION

The Boot Jack underground uranium mine can be reached by driving about 13 miles north from Kayenta, Arizona, on State Highway 464, turning west onto the first dirt road after mile post 408 and driving 3.7 miles to the mine.

The mine was previously operated by the Gibraltar Minerals Company. They ceased operations about February 1960 after removing equipment and sealing the collar of the shaft.

AZ Minerals Corporation, a division of Atlas Corporation, was assigned the mining permit, number 607, on June 29, 1965. The mine officials were S. E. Craig, general mine superintendent, and Marshal Fletcher, mine superintendent. The mailing address was Big Indian Mines, Moab, Utah.

At the time of the inspection the operator was engaged in unwatering the mine and erecting and installing surface facilities. The vertical mine shaft consisted of three timbered compartments. The sump was 437 feet below the collar, the track level was 408 feet below the collar and at the time of the inspection the water level was 366 feet below the collar.

The operation was worked 3 shifts a day, 7 days a week and afforded employment to 14 men, 2 supervisors and the superintendents.

SURFACE

A building to house the hoist, dry, shop, and other facilities was being erected. The hoist room was completed. The structure was covered with a fire-resistant insulating material. A separate building was used for supplies storage.

Two diesel-powered compressors were on the property. They were 500- and 600-cfm capacity and were equipped with safety and drain valves. One compressor was used to inject air into the mine water discharge line. The air inlets of both compressors were close enough to the engine exhaust so that with some wind conditions exhaust gases could be introduced underground. The operator planned to extend the exhaust stacks to preclude this possibility before mining operations commenced.

FIRE HAZARDS AND FIRE-FIGHTING EQUIPMENT

The headframe was constructed of steel. The buildings were covered with a fire-resistant material. The shaft was timbered and was dry in the upper section and wet in the lower section. An adequate amount of water for fire fighting was available. A 15-pound dry chemical fire extinguisher was in the hoist room. The fuel tanks were on ground sloping away from the shaft and buildings.

SHAFT AND HOISTING

The shaft consisted of three compartments, two for hoisting and a manway. Ladders and solars were provided. The shaft timber was examined when exposed by the receding water and replaced where necessary. A railing and gate were around the collar.

The single-drum hoist was powered by a gasoline engine through an enclosed gear train. The engine gases were exhausted outside. The Vulcan hoist was equipped with two brake drums. A position indicator and a bell were provided.

The 3/4-inch rope was in new condition.

The 50-foot headframe was constructed of steel. A sheave platform and handrails were provided. The ladderway to the platform was on a back brace.

VENTILATION

An electric-powered fan provided a flow of air through tubing to the pump level in the shaft. The fan inlet and drive were guarded.

ELECTRICITY

Electric power was provided by a 75-kva and a 15-kw motor-generator. Neither the units nor the switches were frame grounded.

GENERAL HEALTH AND SAFETY

First-aid supplies and a stretcher were available.

RECOMMENDATION

Electricity

The motor-generator sets and switches should be frame grounded.

ACKNOWLEDGMENT

The cooperation of mine officials and employees during this inspection is gratefully acknowledged.

Respectfully submitted,

R. C. Derzay

**R. C. Derzay
Mining Health and Safety Engineer**

Approved:

E. W. Felegy

**E. W. Felegy
Acting District Manager**

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF MINES
HEALTH AND SAFETY ACTIVITY

HEALTH AND SAFETY INSPECTION REPORT
BOOT JACK MINE (URANIUM)
AZ MINERALS CORPORATION
NAVAJO INDIAN RESERVATION
KAYENTA, NAVAJO COUNTY, ARIZONA

August 31, 1965

By

R. C. Derzay
Mining Health and Safety Engineer

Originating Office - Bureau of Mines
P. O. Box 15037, Lakewood, Colorado 80215
E. W. Felegy, Acting District Manager
Health and Safety District E

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THE NAVAJO TRIBE

SEP 17 1965

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HEALTH AND SAFETY INSPECTION REPORT
BOOT JACK MINE (URANIUM)
AZ MINERALS CORPORATION
NAVAJO INDIAN RESERVATION
KAYENTA, NAVAJO COUNTY, ARIZONA

August 31, 1965

By

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Respectfully submitted,



**R. C. Derzay
Mining Health and Safety Engineer**

Approved:



**E. W. Felegy
Acting District Manager**



1965
JUL 5 1965
MINING DEPT

IN REPLY REFER TO:

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

P. O. BOX 1716
CARLSBAD, NEW MEXICO 88220

July 30, 1965

REPORT OF EXAMINATION
BOOT JACK MINE
AZ MINERALS CORPORATION
NAVAJO RESERVATION
MONUMENT VALLEY, ARIZONA

URANIUM PERMIT
No. 607

by
C. M. McConnell
Deputy Regional Min. Supv.

U. S. DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
BRANCH OF MINING OPERATIONS
CONSERVATION DIVISION

The Boot Jack mine property assigned to AZ Minerals Corporation and located in the western part of Monument Valley was examined July 21, 1965. This was the first examination under the present assignment.

The property was formerly operated under assignment by Gibraltar Minerals Corporation on Permit # 384. A 410-foot deep shaft was sunk on the property and a narrow channel of high grade uranium ore mined out. The property was satisfactorily abandoned and all buildings and equipment including the headframe were removed. The shaft was conditioned by welding a steel plate on rails over the opening.

Presently AZ Minerals a subsidiary of Atlas Corporation has taken an assignment of the same property under mining permit 607, approved June 29, 1965.

On day of examination men were employed constructing footings for the erection of a new steel headframe and hoist. When the headframe is completed dewatering of the mine will commence while additional shop and living buildings are being erected.

The operators plan to explore the outer boundary of the mine workings for additional ore and to drive a 1,200 foot drift to an additional orebody previously drilled by Gibraltar Minerals.

Copies of mine and drill maps from the files of this office have been furnished the new operators in order to effect safety and promote recovery of the resources.

The mine made about 100 gallons of water a minute. No measurement had been made to determine where the water stood in the shaft. Considerable long wall drilling by the former operators did not reveal any ore beyond the limits of the present channel.

C. M. McConnell

C. M. McConnell
Deputy Regional Mining Supv.

Orig. to : Supt., Navajo Agency
cc : Comm., Office of Indian Affairs
 : Navajo Tribal Mining Engineer
 : Chief, Branch of Mining Operations
 : Bureau of Mines, Denver
 : Arizona State Mine Inspector
 : Files



IN REPLY REFER TO:

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

P. O. BOX 1716
CARLSBAD, NEW MEXICO 88220

July 29, 1965

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AUG 5 1965
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REPORT OF EXAMINATION
ALMA MINE
GRANT SHUMWAY
MONUMENT VALLEY AREA, ARIZONA

URANIUM PERMIT
ARIZONA # 579

by
C. M. McConnell
Deputy Regional Mining Supv.

U. S. DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
BRANCH OF MINING OPERATIONS
CONSERVATION DIVISION

The Alma mine located on mining permit No. 579 in the western portion of Monument Valley Area of the Navajo Reservation was examined July 16, 1965. A previous examination was made June 10, 1965.

Production was coming from the right, or east, entry off the bottom of the 700-foot incline. At the time of examination an extension to the air line was being installed preparatory to drilling the face. No work was being done in the left, or west, entry and flooding prevented entrance to that portion of the mine.

The mine was ventilated by fans from the surface blowing down drill holes. A new installation within fifty feet of the face had just been completed. A drill hole reamed to 10 inches delivered about 2,500 CFM near the face. The bottom of the hole was equipped with a pipe and elbow on which air tubing can be attached. The operator was advised to keep tubing to within 30 feet of the face.

Two pieces of diesel equipment are used underground; a Bureau of Mines approved truck and a loader which has no approval plate. The truck requires 6,000 CFM of air for continuous operation underground. The operations are intermittent and to the surface. Additional ventilation would be necessary for continuous use of the loader, which is also intermittent. Air samples taken by both the Bureau of Mines and Arizona State inspectors have not revealed any CO produced by the equipment while in operation. It would not be possible economically to supply sufficient air to the mine to meet the requirements of the continuous

operations of the equipment. Sufficient air to dilute the harmful Nitrous Oxides to 5 parts per million should make the use of the equipment reasonably safe. Any mechanical failure of either engine should be promptly repaired. The operator was advised of these precautions.

The high walls of the open cut at the portal of the mine can always be a hazard due to slides. Sluffing of the sides along the toe of the cut has helped to prevent larger slides. However, the operators were cautioned to keep watch for any indication of slides and more particularly at times of heavy rains.

No primers or loose dynamite were observed in the shop area. A partial box of dynamite half filled with muck was observed near the face. The operator was told to remove it back from the face during drilling operations.

There has been about 1,500 tons of ore shipped from the mine which assays about 0.20 percent U_3O_8 .

C. M. McConnell

C. M. McConnell
Deputy Regional Mining Supv.

Orig. to: Supt., Navajo Agency
cc: Comm., Office of Indian Affairs
: Chief, Branch of Mining Operations
: Navajo Tribal Mining Engineer
: Arizona State Mine Inspector
: Bureau of Mines, Denver
: Files



IN REPLY REFER TO:

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

P. O. BOX 1716
CARLSBAD, NEW MEXICO 88220

July 15, 1965

REPORT OF EXAMINATION
ALMA MINE
GRANT SHUMWAY
MONUMENT VALLEY AREA, ARIZONA

URANIUM PERMIT
ARIZONA # 579

by
Howard B. Nickelson
Mining Engineer

U. S. DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
BRANCH OF MINING OPERATIONS
CONSERVATION DIVISION

On June 10, 1965, C. V. Collins and the writer contacted Dean Shumway at the mine in regard to use of diesel equipment underground without sufficient ventilation. The Arizona State Mine Inspector had made a previous inspection and found insufficient ventilation and the operation of a loader that was not approved by the U. S. Bureau of Mines. His report showed no carbon monoxide.

On the day of the inspection two fans installed over a 6 and 9 inch drill holes were blowing approximately 3,800 cfm of air into the mine. The U. S. Bureau of Mines approved shuttle car being used required 6,000 cfm for adequate operation. No Indian miners were employed on the day of inspection, only Dean Shumway and his cousin who apparently are partners with Grant Shumway. Dean stated he would drill another hole and put a larger fan over the hole in an attempt to provide the 6,000 cfm needed.

The housekeeping about the surface was poor. The banks of the incline to the portal needed to be trimmed. Roof control in mining area appeared adequate. One place in the incline should be timbered to prevent falling shale. He was allowed to continue operation with the understanding that more ventilation be provided.

Howard B. Nickelson

Howard B. Nickelson
Mining Engineer

Orig. to: Supt., Navajo Agency
cc: Comm., Office of Indian Affairs
: Chief, Branch of Mining Operations
: Navajo Tribal Mining Engineer
: Bureau of Mines, Denver
: Files

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MINING DEPT.



IN REPLY REFER TO:

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

P. O. BOX 1716
CARLSBAD, NEW MEXICO 88220

May 5, 1965

REPORT OF EXAMINATION
ALMA MINE
GRANT SHUMWAY
MONUMENT VALLEY AREA, ARIZONA

URANIUM PERMIT
ARIZONA # 579

by
Howard B. Mickelson
Mining Engineer

U. S. DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
BRANCH OF MINING OPERATIONS
CONSERVATION DIVISION

The Alma Mine, Monument Valley Area, is operated by Grant Shumway. The mine is about 15 miles north of Kayenta and about one mile west of the main highway to Mexican Hat. The last inspection was on March 12, 1965. On April 20, 1965, C. V. Collins, Tribal Engineer, informed me that Tom Jones, Navajo employee was killed by a fall of ground at the mine. On April 21, I called the Bureau of Mines, Howard Byrd, and informed them of the accident. Mr. Husted, Bureau of Mines coal mine inspector, arrived about noon on April 22, and the inspection was made on the afternoon of the 22nd. Mr. Dean Shumway and Grant Shumway informed us of the accident details.

Tom Jones, 45 to 50 years old, was hired as a night watchman to watch the generator used to power the pumps used to de-water the mine. On the evening of April 15, 1965, about 9:30 p.m. Dean Shumway left the mine to go to Mexican Hat his home, and at that time he had talked to Tom Jones. During the night Tom Jones got his own shovel, put on waterproof clothing and proceeded down the 900-foot incline to the pump located on the ore zone level which was driven about 18 feet off each side of the incline. Apparently, he sat around for awhile as his gloves and shovel were at the corner of the incline and right drift. Both drift faces had been blasted about 7:30 p.m. that evening and no one had barred down the loose ground since the blasts as Jones was the first one in the mine since the blasts. While underground he was apparently standing along the edge of a slab in the roof located at a point in line with the right rib of the incline and 3 to 4 feet from the left rib of the right hand drift. He was apparently hit with the edge of a slab measuring about 4 feet by 3½ feet by 10 inches to 3 inches thick, which fell out of the roof. He was found at the foot

of the incline about 7:30 a.m. by Dean Shumway. He apparently crawled 30 to 40 feet from the accident and sat down. He was found face up in the water. An autopsy showed a broken back, crushed internal organs and a badly smashed right leg. The generator and pumps were still operating at the time he was found. The Navajo Police were informed and the Arizona State Mine Inspector. The police investigated the accident, removed the body and ordered an autopsy. The Arizona State Mine Inspector made his inspection on April 19.

Grant and Dean Shumway stated that they had given orders to Tom not to go underground but if the generator should stop to contact Dean at Mexican Hat so he could remove the pump or restart the generator. Why Mr. Jones went underground will never be known, but the suction pipe could have been partially clogged, he could have become bored with nothing to do or he may have had some reason to check to see that the water level was being maintained as centrifical pumps will burn up if they run out of water.

Ever since the mine started underground the operators have been cautioned, threatened, lectured about having loose ground in their workings and they have been rather lax in correcting these violations; however, they did timber the area recommended in my last inspection report of March 18, 1965.

On April 23, Husted and the writer went to the property to observe the slab that killed Tom because the water was too deep on the level on April 22. At that time loose material was observed in the incline and on the level.

Since the slab fell from an area that had been mined and not in a fresh blasted face it seems the operators were lax on checking and barring down bad roof. The roof is a coarse wet sandstone with numerous crossbedded partings. It appears that it will be solid enough to stand without timber or roof bolts but careful attention should be taken to check for loose pieces and if there is doubt roof bolts or timber should be installed.

It was recommended that two new bars be obtained and kept in each heading and that the roof be continually checked for loose material.

Tom Jones was married and had grown children, also a small child lived with them. He had worked in mines in the area and apparently was experienced.

Howard B. Nickelson
Howard B. Nickelson
Mining Engineer

Orig. to: Supt., Navajo Agency
cc: Comm., Office of Indian Affairs
: Chief, Branch of Mining Operations
: Navajo Tribal Mining Engineer
: Bureau of Mines, Denver
: Files

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MAY 10 1965

MINING DEPT.



DISTRICT E

**UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF MINES**

Health and Safety Activity

1457 AMMONS STREET
POST OFFICE BOX 15037
LAKEWOOD, COLORADO 80215

May 7, 1965

File No. *437.2

**Mr. Grant Shumway
Blanding, Utah**

**Subject: Health and Safety Inspection Report
Alma Mine (Uranium)
Grant Shumway
Navajo Indian Reservation
Kayenta, Navajo County, Arizona**

Dear Mr. Shumway:

The enclosed report covers a health and safety inspection of the above-named mine made in compliance with Order No. 1040, April 4, 1944, by the Secretary of the Interior.

Any comments you desire to make concerning the inspection or report will be appreciated.

Sincerely yours,

C. W. Felegy

**R. W. Felegy
Acting District Manager**

Enclosure

**cc: Commr. of Ind. Affairs
Area Dir., Bur. of Ind. Affairs
Sup't. Navajo Service
Chmn., Navajo Council
Tribal Mining Engineer**

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THE NAVAJO TRIBE
MAY 10 1965
MINING DEPT.**

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF MINES
HEALTH AND SAFETY ACTIVITY

HEALTH AND SAFETY INSPECTION REPORT
ALMA MINE (URANIUM)
GRANT SHUMWAY
NAVAJO INDIAN RESERVATION
KAYENTA, NAVAJO COUNTY, ARIZONA

April 27, 1965

by

R. C. Derzay
Mining Health and Safety Engineer

Originating Office - Bureau of Mines
1457 Ammons Street, P. O. Box 15037, Lakewood 15, Colorado
J. Howard Bird, Acting District Manager
Health and Safety, District E

HEALTH AND SAFETY INSPECTION REPORT
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GRANT SHUMWAY
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INTRODUCTION

This report is based on a health and safety inspection made in compliance with Order No. 1940, April 4, 1944, by the Secretary of the Interior authorizing the Bureau of Mines to inspect mines on Indian Lands and Government-leased lands on the Public Domain.

The purpose of the inspection and the report is to call to the attention of all concerned the hazards observed in the mine and surface plant during the inspection and to recommend means of correcting these hazards.

Safety improvements made since the last inspection, October 14, 1964, are listed in this report. Recommendations repeated from the last report are indicated by asterisks.

GENERAL INFORMATION

The Alma underground uranium mine is approximately 15 miles north of Kayenta, Arizona. It can be reached by driving north from Kayenta on State Highway 464 to the first dirt road going west after milepost 408, then traveling west on this dirt road about 1/2 mile.

The mine, operated by Grant Shumway, Blanding, Utah, afforded employment to 3 men. Work was done 1 shift a day, alternately 5 and 6 days a week.

The mine was opened by an 11 degree incline about 700 feet long. Two short drifts, about 15 and 30 feet long, had been driven from the bottom of the incline. Both drift headings were approximately at right angles to the incline and were in ore.

The ore host rock was sandstone. The mine was wet.

Dean Shumway accompanied the inspector and the recommendations were discussed with him.

SURFACE

The compressor had been moved a few hundred feet from the incline trench and compressed air was being piped down a drill hole. The exhaust from the engine terminated only a few feet from the air inlets.

FIRE HAZARDS AND FIRE-FIGHTING EQUIPMENT

A 500-gallon diesel tank was located at the top of the incline cut and in the event of a tank rupture the contents would drain down the incline. This tank was not posted "No Smoking."

A several-hundred-gallon-capacity tank of gasoline was on a stand at the edge of the road at a turn in the road. This tank was not posted "No Smoking." A small leak had developed at the hose connection.

Three tanks with diesel, 1000-, 500- and 50-gallon capacities, and a large tank of L-P gas were situated a few hundred feet from the incline but all within about 30 feet of two ventilation drill holes. None of these tanks were posted "No Smoking." They provided fuel for the compressors, fan and generating plant.

Neither of the two diesel-powered units used underground were equipped with fire extinguishers.

STORAGE AND USE OF EXPLOSIVES

A magazine with a maximum storage capacity of 2 tons had been built. It was about 150 feet from the shop. A large mound of earth barricaded it from the shop, incline and work areas. It was constructed of a wood frame covered with sheet metal. A door was not provided. It was vented. A sign warning of explosives was not posted.

About 14 sacks of AN-FO were stored in one end of the shop. Cardboard and several 5-gallon cans of oil and grease were nearby. The operator planned to move the AN-FO to another property the following day.

Blasting caps were stored in a locked drawer in the shop.

Fuse was cut and capped on a clean bench in the shop. Primers were made in this area just prior to loading the rounds. Four sticks of dynamite remained in the shop after the round had been fired the afternoon of the inspection.

Neither misfires nor undetonated dynamite were noted after the blast.

LOADING, HAULING AND DRILLING

A jackleg drill was used for drilling. Water was used when collaring and drilling holes.

Broken rock was loaded by a diesel-powered front-end loader from which the scrubber had been removed. The material was loaded into a diesel-powered truck. The truck bore U. S. Bureau of Mines approval plates but the loader

did not. Consequently no action taken during this inspection should be interpreted as official approval of the loader. A horn or other suitable warning device was not provided on the truck.

GROUND CONTROL

Some loose rock was noted in the back at the bottom of the incline. A scaling bar was available.

VENTILATION

The mine was ventilated by 1300 cfm of air blown down two drill holes which intersected the drifts near the bottom of the incline. This volume of air was not adequate to sufficiently dilute exhaust gases from both diesels during the mucking cycle.

One fan was driven by an electric motor; the other by pulleys from an interval combustion engine. The engine exhaust stack was extended to dissipate exhaust gases from the fan inlet. Both fan inlets were guarded but the pulley drive was not.

RADIATION

The concentration of radon-daughter products in the mine atmosphere is reported as a multiple of a working level (W.L.). One working level, 1.3×10^5 million electron volts of potential alpha energy per liter of air, is considered to be the maximum concentration to which a man can be safely exposed throughout his working lifetime. U. S. Public Health Service Publication No. 494 describes the sampling method, which consists of filtering the daughters from a known volume of air and measuring the alpha activity on the filter.

Increasing the flow of air to the working place is the most effective means of reducing high radon-daughter concentrations to a safe level. The volume of air required to reduce a specific concentration to a safe level can be calculated from the equation

$$V_2 = V_1 (W.L.)^{0.56},$$

where V_2 is the required volume of air in cfm,

V_1 is the existing ventilation, cfm, at time of sampling,
and

W.L. is the measured multiple of a working level.

The required volume of air, V_2 , would be higher if the incoming air is contaminated.

Radon daughter concentrations measured and other data are listed in table 1. Table 2 lists the projected average daily exposure levels experienced by the miners at the time of the survey.

Table 1

Location, Time, Number of Men, Operation	Radon-daughter Concentration W.L. ^{1/}	V ₁ cfm ^{2/}	V ₂ cfm ^{3/}
Drift heading, 1:48 pm just prior to mucking	1.2	1300	1400

^{1/}Reported in multiples of a safe working level (W.L.).

^{2/}Measured ventilation

^{3/}The amount of air required to reduce the radon daughters to one W.L. from equation $V_2 = V_1 (W.L.)^{0.56}$.

Table 2

No. Men	Location Operation	Estimated average full shift exposure to radon-daughters ^{1/}
3	General Mining	0.9

^{1/}This average level is estimated by weighting the radon-daughter concentrations in various places by the time spent in them. Main areas of exposure are generally included such as, working place, lunch, travel to and from stope, securing supplies, etc.

QUALITY OF AIR

Direct reading field test instruments were used to measure CO (carbon monoxide) and NO₂ (nitrogen dioxide) concentrations in the mine air during this survey.

In addition, a mine air sample was collected in a vacuum bottle during the survey and was analyzed in the Bureau of Mines laboratory, Denver, Colorado.

Both field test and laboratory analytical results are shown in table 3.

Table 3

Sample No.	Place, time	PERCENT					Ppm* NO ₂
		O ₂	CO ₂	CO	CH ₄	N ₂	
X-9150	Drift, 1:50 pm			Trace			0
	Drift, 2:02 pm	20.87	0.09	0.000	0.00	79.04	

*Parts per million

Air for ventilation is considered to be of satisfactory quality when it contains at least 19.5 percent O₂ (oxygen), not more than 0.5 percent CO₂ (carbon dioxide), and no harmful quantities of dust or noxious gases. The threshold limit value for CO is 0.01 percent and for NO₂ is 5 parts per million for 8 hours exposure.

The results listed in table 3 indicate that the air was of satisfactory quality with respect to these gases at the times and places shown.

ELECTRICITY

Electric power was generated by a 35-kva butane powered generating plant. Power was transmitted to the water pump underground through a drill hole.

GENERAL HEALTH AND SAFETY

A fatality as a result of a fall of ground from the back at the bottom of the incline had occurred since the last inspection. The victim was the night watchman whose duties were confined to the surface facilities.

A stretcher was available in the shop but first aid supplies were lacking.

The men wore hard hats and safety-toe boots, and utilized electric cap lamps for underground illumination.

SAFETY IMPROVEMENTS

Surface

Compressed-gas cylinders were secured.

Fire Hazards and Fire-Fighting Equipment

The L-P tank and fan had been moved from the edge of the incline trench.

Storage and Use of Explosives

A magazine had been built.

Fuse was cut and capped in a clean, dry place.

Loading, Hauling and Drilling

The exhaust pipe of the mine truck had been repaired.

Ground Control

The walls of the trench part of the incline had been barred down. Rains since the last inspection washed loose material down and helped slope and compact the material.

The brow above the incline portal had been barred down.

Ventilation

The fans were positioned to prevent recirculation of air.

The exhaust stack on the diesel-powered fan was extended to minimize chances of exhaust gases entering the fan.

RECOMMENDATION NO LONGER CONSIDERED NECESSARY

Loading, Hauling and Drilling

As the AC truck is no longer used underground, the recommendation regarding the installation of headlights is dropped.

RECOMMENDATIONS

Surface

*The exhaust pipe from the diesel compressor engine should be extended at least 3 feet.

Fire Hazards and Fire-Fighting Equipment

*The 500-gallon tank of diesel should be moved away from the incline a sufficient distance so that in the event of rupture no diesel fuel could drain into the mine.

All fuel tanks should be posted with "No Smoking" signs.

The tank containing gasoline should be moved away from the road a sufficient distance to minimize chances of its being knocked down by passing traffic.

The leak in the hose connection to gasoline tank should be repaired.

The area around each tank in the compressor-fan-generating plant area should be ditched to drain the contents of the tanks away from the vent holes in the event of tank rupture.

*Each unit of diesel equipment used underground should be equipped with a suitable fire extinguisher.

Storage and Use of Explosives

The magazine should be made bullet resistant.

The magazine should be provided with a door which should be kept locked when no one is in the magazine.

A sign should be posted warning of explosives.

The AN-FO should be removed from the shop.

*Extraneous material, particularly those which are flammable, as cardboard, oil, and grease, should never be stored with blasting agents.

A separate magazine should be provided for the blasting caps.

Dynamite should not be brought into the shop.

Primers should be made underground just prior to charging into holes to be blasted.

Loading, Hauling and Drilling

Only Bureau of Mines approved^{1/} mobile diesel-powered equipment should be used underground. Bureau of Mines approved equipment should be used to replace or add to the mobile diesel-powered equipment now in use underground when replacement of present equipment, or additional equipment, is necessary.

*Mobile equipment should be provided with serviceable, audible warning devices.

The front-end loader should be equipped with a scrubber.

Ground Control

All loose, unsupported rock should be either scaled down or adequately supported.

Ventilation

A sufficient quantity of ventilating air should be coursed through the mine for proper dilution of noxious or harmful gases and to meet the approval conditions of the diesel equipment. The amount required for the USBM approved truck is stamped on the approval plate. The loader would require a correspondingly larger volume of air.

*The belt drive on the fan should be guarded.

General Health and Safety

*An adequate supply of first aid supplies should be kept available.

^{1/}Bureau of Mines approvals for mobile diesel-powered equipment are issued to the manufacturer only after application to and tests by the Branch of Electrical-Mechanical Testing, Bureau of Mines, Pittsburgh, Pennsylvania 15213. Approved equipment is identified by a Bureau of Mines approval plate attached to each complete unit.

ACKNOWLEDGMENT

The cooperation of Dean Shumway and mine employees during this inspection is gratefully acknowledged.

Respectfully submitted

R. C. Derzay

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Mining Health and Safety Engineer

Approved:

E. W. Felegy

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Acting District Manager

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The mine was opened by an 11 degree incline about 700 feet long. Two short drifts, about 15 and 30 feet long, had been driven from the bottom of the incline. Both drift headings were approximately at right angles to the incline and were in ore.

The ore host rock was sandstone. The mine was wet.

Dean Shumway accompanied the inspector and the recommendations were discussed with him.

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The men wore hard hats and safety-toe boots, and utilized electric cap lamps for underground illumination.

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Surface

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Fire Hazards and Fire-Fighting Equipment

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Storage and Use of Explosives

A magazine had been built.

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Loading, Hauling and Drilling

The exhaust pipe of the mine truck had been repaired.

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Respectfully submitted

R. C. Derzay

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Mining Health and Safety Engineer

Approved:

E. W. Felegy

E. W. Felegy
Acting District Manager



UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF MINES

Health and Safety Activity

DISTRICT 2

1457 AMMONS STREET
POST OFFICE BOX 15037
LAKEWOOD, COLORADO 80215

April 20, 1965

File No. 473

**Elmer J. Gilstrap, Manager
Arizona Silica Sand Company
General Delivery
Houck, Arizona**

**Subject: Health and Safety Inspection Report
Houck Pit
Arizona Silica Sand Company
Houck, Apache County, Arizona**

Dear Mr. Gilstrap:

The enclosed report covers a Health and Safety inspection of the above-named mine made in compliance with Order No. 1940, April 4, 1944, by the Secretary of the Interior.

Any comments you desire to make concerning the inspection or report will be appreciated.

Very truly yours,

J. Howard Bird

**J. Howard Bird
Acting District Manager**

Enclosures (2)

**cc: Commr. Indian Affairs
Area Dir., Bur. Ind. Aff.
Supt., Navajo Service
Chairman, Navajo Tribal Council
Tribal Mining Engineer**

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APR 23 1965

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UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF MINES
HEALTH AND SAFETY ACTIVITY

HEALTH AND SAFETY INSPECTION REPORT
HOUCK PIT
ARIZONA SILICA SAND COMPANY
NAVAJO INDIAN RESERVATION
HOUCK, APACHE COUNTY, ARIZONA

April 13, 1965

By

R. C. Derzay
Mining Health and Safety Engineer

Originating Office - Bureau of Mines
1457 Ammons Street, P. O. Box 15037, Lakewood, Colorado
J. Howard Bird, Acting District Manager
Health and Safety, District E

HEALTH AND SAFETY INSPECTION REPORT
HOUCK PIT
ARIZONA SILICA SAND COMPANY
NAVAJO INDIAN RESERVATION
HOUCK, APACHE COUNTY, ARIZONA

April 13, 1965

By

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The purpose of the inspection and the report is to call to the attention of all concerned the hazards observed in the mine and surface plant during the inspection and to recommend means of correcting these hazards.

The last inspection was made October 21, 1964. Recommendations repeated from the last report are indicated by asterisks.

GENERAL INFORMATION

The office of the Arizona Silica Sand Company was about 1½ miles south of U. S. Highway 66 at Houck, Arizona, about 33 miles west of Gallup, New Mexico. The pit was reached by traveling 1.4 miles west of the Houck turnoff on U. S. Highway 66, turning northwesterly at the Pine Springs turnoff, then traveling 3 miles westerly on an abandoned portion of U. S. Highway 66. The second dirt road west of the Querino Canyon Bridge led to the pit.

Pit walls were less than 10 feet high. The sandy material was loaded into trucks by a front-end loader. The pit was worked 4 days a week, single shift. The crew consisted of the loader operator and the truck drivers. Maintenance and repair work was done each Monday.

GENERAL HEALTH AND SAFETY

No one at the operation had been trained in first-aid methods. First-aid supplies were kept at the office.

SAFETY IMPROVEMENT

The following safety improvement was made during the inspection.

Fire Hazards

The storage tank for diesel oil was posted against smoking or open flame.

RECOMMENDATION


General Health and Safety

*Key personnel should be trained in first-aid methods.

ACKNOWLEDGMENT


The cooperation of Mr. Elmer J. Gilstrap during this inspection is gratefully acknowledged.

Respectfully submitted,



R. C. Derzay
Mining Health and Safety Engineer

Approved:



J. Howard Bird
Acting District Manager



UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF MINES

Health and Safety Activity

1457 AMMONS STREET
POST OFFICE BOX 15037
LAKEWOOD, COLORADO 80215

DISTRICT 8

April 21, 1965

File No. 473

Allison and Haney Co.
P. O. Box 537
Shiprock, New Mexico

Subject: Health and Safety Inspection Report
Allison and Haney Sand & Gravel Pit
Allison and Haney Co.
Navajo Indian Reservation
Shiprock, San Juan County, New Mexico

Gentlemen:

The enclosed report covers a Health and Safety inspection of the above-named mine made in compliance with Order No. 1940, April 4, 1944, by the Secretary of the Interior.

Any comments you desire to make concerning the inspection or report will be appreciated.

Sincerely yours,

J. Howard Bird

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Acting District Manager

Enclosure

cc: Commr. Ind. Affairs
Area Dir., Bur. Ind. Affairs
Supt., Navajo Service
Chmn, Navajo Council
Tribal Mining Engineer

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MINING DEPT.

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ID 41461-29-021-14411
Permit No. 14-20-603-6173

UNITED STATES
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HEALTH AND SAFETY ACTIVITY

HEALTH AND SAFETY INSPECTION REPORT
ALLISON AND HANEY SAND AND GRAVEL PIT
ALLISON AND HANEY COMPANY
NAVAJO INDIAN RESERVATION
SHIPROCK, SAN JUAN COUNTY, NEW MEXICO

April 13, 1965

By

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HEALTH AND SAFETY INSPECTION REPORT
ALLISON AND HANEY SAND AND GRAVEL PIT
ALLISON AND HANEY COMPANY
NAVAJO INDIAN RESERVATION
SHIPROCK, SAN JUAN COUNTY, NEW MEXICO

April 13, 1965

By

R. C. Derzay
Mining Health and Safety Engineer

INTRODUCTION

This report is based on a health and safety inspection made in compliance with Order No. 1940, April 4, 1944, by the Secretary of the Interior authorizing the Bureau of Mines to inspect mines on Indian Lands and Government-leased lands on the Public Domain.

The purpose of the inspection and the report is to call to the attention of all concerned the hazards observed in the mine and surface plant during the inspection and to recommend means of correcting these hazards.

Safety improvements made since the last inspection, October 15, 1964, are listed in this report.

GENERAL INFORMATION

The Allison and Haney sand and gravel pit and plant facilities are 2 miles north of Shiprock, New Mexico, just east of U. S. Highway 666. The company mailing address was P. O. Box 637, Shiprock. Clifford Ford, superintendent, accompanied the engineer throughout the inspection, and the recommendations were discussed with him.

Sand and gravel were produced from a single level pit. Excavated material was dozed directly into a hopper over the feed belt. A diesel-powered crushing and screening plant produced sized materials which were shipped, stockpiled, or delivered to the washing plant. This operation was down for repairs at the time of the inspection.

A screening plant, in addition to the above described facility, had been installed since the previous inspection. It consisted of two conveyor belts and a vibrating screen. Sandy material, mined from a nearby bank by a front-end loader, was dumped into a hopper feeding a belt. The material was screened; the oversize spilled into a standby truck and the undersized onto the second belt to a stockpile. Three men worked this operation. The belts and screen were electrically powered.

SURFACE

The shaker drive on the crushing-screening plant was not guarded.

ELECTRICITY

The control box for the feeder belt drive at the sand washing plant was not frame grounded.

SAFETY IMPROVEMENTS

Electricity

The control box for the classifier drive was frame grounded.

The electric cable at the cement silo and conveyor belt had been reinsulated.

A suitable absorber protected the above cable from abrasion where the cable entered the switch box.

General Health and Safety

Key personnel had been trained in first-aid methods.

RECOMMENDATIONS

Surface

The shaker drive on the crushing-screening plant should be guarded.

Electricity

The control box to the feeder belt drive at the sand washing plant should be frame grounded.

ACKNOWLEDGMENT

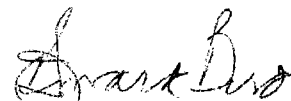
The cooperation of Clifford Ford and employees during this inspection is gratefully acknowledged.

Respectfully submitted,



R. C. Derzay
Mining Health and Safety Engineer

Approved:



J. Howard Bird
Acting District Manager

R-3
ID 42231-02-001-14412
Contract No. 14-20-603-6405

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF MINES
HEALTH AND SAFETY ACTIVITY

HEALTH AND SAFETY INSPECTION REPORT
HOUCK PIT
ARIZONA SILICA SAND COMPANY
NAVAJO INDIAN RESERVATION
HOUCK, APACHE COUNTY, ARIZONA

April 13, 1965

By

R. C. Derzay
Mining Health and Safety Engineer

Originating Office - Bureau of Mines
1457 Ammons Street, P. O. Box 15037, Lakewood, Colorado
J. Howard Bird, Acting District Manager
Health and Safety, District E

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HEALTH AND SAFETY INSPECTION REPORT
HOUCK PIT
ARIZONA SILICA SAND COMPANY
NAVAJO INDIAN RESERVATION
HOUCK, APACHE COUNTY, ARIZONA

April 13, 1965

By

R. C. Derzay
Mining Health and Safety Engineer

INTRODUCTION

This report is based on a health and safety inspection made in compliance with Order No. 1940, April 4, 1944, by the Secretary of the Interior authorizing the Bureau of Mines to inspect mines on Indian Lands and Government-leased lands on the Public Domain.

The purpose of the inspection and the report is to call to the attention of all concerned the hazards observed in the mine and surface plant during the inspection and to recommend means of correcting these hazards.

The last inspection was made October 21, 1964. Recommendations repeated from the last report are indicated by asterisks.

GENERAL INFORMATION

The office of the Arizona Silica Sand Company was about 1½ miles south of U. S. Highway 66 at Houck, Arizona, about 33 miles west of Gallup, New Mexico. The pit was reached by traveling 1.4 miles west of the Houck turnoff on U. S. Highway 66, turning northwesterly at the Pine Springs turnoff, then traveling 3 miles westerly on an abandoned portion of U. S. Highway 66. The second dirt road west of the Querino Canyon Bridge led to the pit.

Pit walls were less than 10 feet high. The sandy material was loaded into trucks by a front-end loader. The pit was worked 4 days a week, single shift. The crew consisted of the loader operator and the truck drivers. Maintenance and repair work was done each Monday.

GENERAL HEALTH AND SAFETY

No one at the operation had been trained in first-aid methods. First-aid supplies were kept at the office.

SAFETY IMPROVEMENT

The following safety improvement was made during the inspection.

Fire Hazards

The storage tank for diesel oil was posted against smoking or open flame.

RECOMMENDATION

General Health and Safety

*Key personnel should be trained in first-aid methods.

ACKNOWLEDGMENT

The cooperation of Mr. Elmer J. Gilstrap during this inspection is gratefully acknowledged.

Respectfully submitted,



R. C. Derzay
Mining Health and Safety Engineer

Approved:



J. Howard Bird
Acting District Manager



IN REPLY REFER TO:

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

P. O. BOX 1716
CARLSBAD, NEW MEXICO 88220

March 18, 1965

REPORT OF EXAMINATION
ALMA MINE
GRANT SHUMWAY
MONUMENT VALLEY AREA, ARIZONA

URANIUM PERMIT
ARIZONA # 579

by
Howard B. Nickelson
Mining Engineer

U. S. DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
BRANCH OF MINING OPERATIONS
CONSERVATION DIVISION

The Alma Mine, Monument Valley Area, is operated by Grant Shumway. The mine is about 15 miles north of Kayenta and about one mile west of the main highway to Mexican Hat. The property was inspected on March 12, 1965 with Grant Shumway's brother. Since the last inspection on November 18, 1964 the incline has been advanced to within a few feet of the ore zone. The ore zone lies in an old stream channel in the Moencopi shale. These old channels generally form aquifers and when the ore zone was hit water was encountered. Two weeks pumping hasn't lowered the water very much.

A serious ground condition exists in the incline. The roof along 60 to 80 feet is composed of soapstone like shale and being not timbered continually sloughs and is now 15 to 20 feet above the floor. The operator had been ordered on October 12, 1964 and on November 18, 1964 to timber this portion of the incline which he has failed to do except for one crossbar hitched into the walls.

Grant Shumway's brother was ordered to timber the incline and that an inspection would be made in a couple of weeks to see that it had been done. If not the property would be closed down permanently. Timber is available at the mine site. The incline is traveled to service the pump. No Navajo employees are at present hired.

It is recommended that action be taken to cancel the permit if this hazard is not corrected within a reasonable time, such as two weeks from the date of the inspection.

Orig. to: Supt., Navajo Agency
cc: Comm., Office of Indian Aff.
: Chief, Branch of Mining Operations
: Navajo Tribal Mining Engineer
: Bureau of Mines, Denver
: Files

Howard B. Nickelson
Howard B. Nickelson
Mining Engineer



IN REPLY REFER TO:

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

P. O. BOX 1716
CARLSBAD, NEW MEXICO 88220

December 2, 1964

REPORT OF EXAMINATION
ALMA MINE
GRANT SHUMWAY
MONUMENT VALLEY AREA, ARIZONA

URANIUM PERMIT
ARIZONA # 579

by
Howard B. Nickelson
Mining Engineer

U. S. DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
BRANCH OF MINING OPERATIONS
CONSERVATION DIVISION

The Alma Mine, Monument Valley area, is operated by Grant Shumway and his brother. The mine is about 15 miles north of Kayenta about one mile west of the main road to Mexican Hat, Utah. The property was inspected on November 18, 1964. A previous inspection was made on October 12, 1964. On the last inspection the property was closed down until the bank of the incline was trimmed and made safe, timber installed underground, and a powder magazine built.

Since that time the bank of the incline cut has been made relatively safe. The powder magazine hasn't been constructed but a small building disassembled was moved and the property for a powder magazine. No timber underground has been placed and the area has sloughed and now about 50 feet of timber will be necessary to contain the soft soapstone back. Mr. Shumway was asked to timber this area as soon as possible. Several other violations cited by U. S. Bureau of Mines on these inspections have been remedied. The fan has been moved over a drill hole and the exhaust has been lengthened to carry the fumes from the fan intake. The butane tank has been moved to prevent the butane from flowing underground should the tank rupture. Exhaust on the compressor has not been lengthened to prevent gas fumes from entering the air intake of the compressor.

At the present time the face of the incline is dry because they are in the Moencopi shale. Water will be encountered when the Chinle or ore bearing formation is reached. The water from the surface sand

is being caught in a sump and pumped to the surface. One of the reasons for the incline banks sloughing was the water was being discharged to close and they became wet. This water is now being discharged several hundred yards from the site.

Two Indian miners are working at the property.

Howard B. Nickelson
Howard B. Nickelson
Mining Engineer

Orig. to: Supt., Navajo Agency
cc: Comm., Office of Indian Affairs
: Navajo Tribal Mining Engineer ✓
: Chief, Branch of Mining Operations
: Bureau of Mines, Denver
: Files

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IN REPLY REFER TO:

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

P. O. BOX 1716
CARLSBAD, NEW MEXICO 88220

December 21, 1964

MINE INSPECTION REPORT
ARIZONA SILICA SAND
HOUCK, ARIZONA
NAVAJO RESERVATION

SAND & GRAVEL
PERMIT ARIZONA
14-20-0603-6405

by
Howard B. Nickelson
Mining Engineer

U. S. DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
BRANCH OF MINING OPERATIONS
CONSERVATION DIVISION

The property was inspected on December 15, 1964. Mr. Gilstrap, manager, was contacted at the plant on the Santa Fe Railroad right of way at Houck. Mr. Gilstrap stated production for this year was much better than for 1963. Some sales have been going to Canada for refrac-sand in their oil fields. This material has to be sent via Portland, Oregon, because of the freight rate schedule. It appears that freight rates east are twice as high as those to the west. The company has requested a change in freight rates to the east so they could compete with Ottawa sand in Texas but to date not much satisfaction has been shown. A larger portion of 10-20 mesh material has been sold which has caused production trouble at times because the larger portion of the material is in the 20-40 range.

The material is mined with an end loader and hauled to the plant by two trucks. No violations of safety were noted at the pit.

Howard B. Nickelson
Howard B. Nickelson
Mining Engineer

Orig. to: Supt., Navajo Agency
cc: Comm., Office of Indian Affairs
: Navajo Tribal Mining Engineer ✓
: Chief, Branch of Mining Operations
: Files

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UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF MINES

Health and Safety Activity

1457 AMMONS STREET
POST OFFICE BOX 15037
LAKEWOOD, COLORADO 80215

November 3, 1964

File No. 473

Allison and Haney
P. O. Box 637
Shiprock, New Mexico

Subject: Health and Safety Inspection Report
B-2, Allison and Haney Sand and Gravel Pit
Allison and Haney Company
Navajo Indian Reservation
Shiprock, San Juan County, New Mexico

Gentlemen:

The enclosed report covers a Health and Safety inspection of the above-named mine made in compliance with Order No. 1960, April 4, 1944, by the Secretary of the Interior.

Any comments you desire to make concerning the inspection or report will be appreciated.

Sincerely yours,

J. Howard Bird

J. Howard Bird
District Supervisor

Enclosure

cc: Commr. Indian Affairs
Area Dir., Bur. Indian Affairs
Supt. Navajo Service
Chm. Navajo Council
Tribal Mining Engr.

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NOV 5 1964

MINING DEPT.

R-2
DMR Code 41461-29-021-14411
Permit No. 14-20-603-6173

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF MINES
HEALTH AND SAFETY ACTIVITY

HEALTH AND SAFETY INSPECTION REPORT
ALLISON AND HANEY SAND AND GRAVEL PIT
ALLISON AND HANEY COMPANY
NAVAJO INDIAN RESERVATION
SHIPROCK, SAN JUAN COUNTY, NEW MEXICO

October 15, 1964

By

Walter Bank and R. C. Derzay
Mining Health and Safety Engineers

Originating Office - Bureau of Mines
1457 Ammons Street, P. O. Box 15037, Lakewood 15, Colorado
J. Howard Bird, District Supervisor
Health and Safety, District H

HEALTH AND SAFETY INSPECTION REPORT
ALLISON AND HANEY SAND AND GRAVEL PIT
ALLISON AND HANEY COMPANY
NAVAJO INDIAN RESERVATION
SHIPROCK, SAN JUAN COUNTY, NEW MEXICO

October 15, 1964

By
Walter Bank and R. C. Derzay
Mining Health and Safety Engineers

INTRODUCTION

This report is based on a health and safety inspection made in compliance with Order No. 1940, April 4, 1944, by the Secretary of the Interior authorizing the Bureau of Mines to inspect mines on Indian Lands and Government-leased lands on the Public Domain.

The purpose of the inspection and the report is to call to the attention of all concerned the hazards observed in the mine and surface plant during the inspection and to recommend means of correcting these hazards.

Safety improvements made since the last inspection, June 14, 1964, are listed in this report. Recommendations repeated from the last report are indicated by asterisks.

Descriptions of physical features and operating procedures included in previous reports concerning which no recommendations are made in this report, are not repeated here.

GENERAL INFORMATION

The Allison and Haney Sand and Gravel Pit was 2 miles north of Shiprock, San Juan County, New Mexico, alongside U. S. Highway 666. The pit is on the Navajo Indian Reservation, and is operated by the Allison and Haney Company whose mailing address is P. O. Box 637, Shiprock, New Mexico. Mr. Clifford Ford was plant superintendent.

Employment varied with production demand and averaged 6 men. At the time of the inspection, 4 men were employed one shift on a 5 or 6-day week.

Sand and gravel were produced from a single level pit. Excavated material was dozed directly into a hopper over the feed belt. A diesel-powered crushing and screening plant delivered sized fractions to steel bins or stockpiles from which the products were hauled by truck to storage piles or the washing plant.

Mr. Clifford Ford accompanied the engineers during the inspection, and recommendations were discussed with him.

SURFACE

A concrete shop building was located approximately midway between the pit area and the concrete batch plant. A scale house and office was located near the batch plant. Fuel was stored in a buried tank and dispensed through a commercial-type dispensing pump located near the scale house.

The crushing and screening plant was being repaired, and the completeness of the mechanical guarding could not be determined. Reportedly additional guarding had been added to the crusher plant. A guard for the belt drive of the conveyor belt at the transfer point, was loose, and had fallen against the belt.

Two portable crushers which required suitable guards were stored on the property. These reportedly are not in use.

The sand washing plant was not operating. This plant was incompletely guarded, but unattached protective screens were available for exposed pinch points.

FIRE HAZARDS AND FIRE-FIGHTING EQUIPMENT

No fire hazards were observed. Oily rags and debris were burned periodically. "No Smoking" signs were posted at the main fuel pump and the diesel-fuel tanks which served the screening plant.

LOADING AND HAULING

Sized material was transported by trucks to storage piles. Sized material was loaded from the stockpile into either the concrete batch plant or truck by a front-end loader. Haul roads were well maintained. All loading and hauling equipment that was noted, appeared to be well maintained.

GROUND CONTROL

No overhanging banks were observed.

DUST

Repair work, only, was noted during the inspection, and this was a non-dusty operation. Therefore no dust samples were collected.

ELECTRICITY AND ILLUMINATION

Exposed electric wires which were no longer used in the operation, had been removed from live switch boxes. The main electric power switch for the sand washing plant had been provided with a lock. The control box for the classifier lacked a frame ground. At the cement silo and conveyor belt, the rubber covered electric cable leading to the switch was deteriorated, and the cable was subjected to possible abrasion at the point where it entered the knockout of the electrical box.

GENERAL HEALTH AND SAFETY

The company maintained no formal safety program. Hard hats were worn by all personnel.

Hospital facilities were located about 3/4-mile from the plant site, and could be contacted by telephone.

SAFETY IMPROVEMENTS

A. The following safety improvements were made since the last inspection:

Surface

Additional guarding had been provided for the return belt drive of the crusher and screening plant.

The sand washing plant had been provided with additional guards.

Fire Hazards and Fire-Fighting Equipment

'No Smoking' signs were posted at fuel tanks.

Electricity and Illumination

A lock was provided on the main power switch of the sand washing plant.

Exposed, unused electric wires were disconnected from the main electric power lines.

All hand-held electrically-powered tools noted were frame-grounded.

B. The safety improvement below was made during the inspection:

Surface

A loose guard for the conveyor belt drive was provisionally repaired, and was slated for future, more permanent repair.

RECOMMENDATIONS

Electricity and Illumination

The control box for the classifier drive should be frame grounded.

The deteriorated rubber-covered electric cable at the cement silo and conveyor belt should be replaced.

The above electric cable, where it enters the electric box, should be protected from abrasion by means of an entrance clamp or other suitable device.

General Health and Safety

*Key personnel should be trained in first-aid methods at least once every two years.

ACKNOWLEDGMENT

The cooperation of pit officials and employees during this inspection is gratefully acknowledged.

Respectfully submitted,

Walter Bank

Walter Bank
Mining Health and Safety Engineer

/s/R/ C. Derzay
R. C. Derzay
Mining Health and Safety Engineer

Approved:

J. Howard Bird

J. Howard Bird
District Supervisor



UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF MINES

Health and Safety Activity

DISTRICT H

1457 AMMONS STREET
POST OFFICE BOX 15037
LAKEWOOD, COLORADO 80215

November 3, 1964

File No. 473

Elmer J. Gilstrap, Plant Manager
Houck Pit
Arizona Silica Sand Company
General Delivery
Houck, Arizona

Subject: Health and Safety Inspection Report
R2, Houck Pit
Arizona Silica Sand Company
Houck, Apache County, Arizona

Dear Mr. Gilstrap:

The enclosed report covers a Health and Safety inspection of the above-named pit made in compliance with Order No. 1940, April 4, 1944, by the Secretary of the Interior.

Any comments you desire to make concerning the inspection or report will be appreciated.

Very truly yours,

A. C. Moschetti

A. C. Moschetti
Acting

J. Howard Bird
District Supervisor

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THE NAVAJO TRIBE

NOV 5 1964

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Enclosures (2)

cc: Commr. of Indian Affairs
Area Dir., Bureau of Indian Affairs
Supt., Navajo Service
Chairman, Navajo Tribal Council
Tribal Mining Engineer

R2
DMR Code 42231-02-001-14412
Contract No. 14-20-603-6405

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF MINES
HEALTH AND SAFETY ACTIVITY

HEALTH AND SAFETY INSPECTION REPORT
HOUGH PIT
ARIZONA SILICA SAND COMPANY
NAVAJO INDIAN RESERVATION
HOUCK, APACHE COUNTY, ARIZONA

October 21, 1964

By

G. R. Kyler
Mining Health and Safety Engineer

Originating Office - Bureau of Mines
1457 Ammons Street, P. O. Box 15037, Lakewood, Colorado
J. Howard Bird, District Supervisor
Health and Safety, District H

HEALTH AND SAFETY INSPECTION REPORT
HOUCK PIT
ARIZONA SILICA SAND COMPANY
NAVAJO INDIAN RESERVATION
HOUCK, APACHE COUNTY, ARIZONA

October 21, 1964

By

G. R. Kyler
Mining Health and Safety Engineer

INTRODUCTION

This report is based on a health and safety inspection made in compliance with Order No. 1940, April 4, 1944, by the Secretary of the Interior authorizing the Bureau of Mines to inspect mines on Indian Lands and Government-leased lands on the Public Domain.

The purpose of the inspection and the report is to call to the attention of all concerned the hazards observed in the mine and surface plant during the inspection and to recommend means of correcting these hazards.

Safety improvements made since the last inspection, June 4, 1964, are listed in this report. Recommendations repeated from the last report are indicated by asterisks.

GENERAL INFORMATION

The main office of the Arizona Silica Sand Company was located approximately 33 miles west of Gallup, New Mexico, 1-1/2 miles south of U. S. Highway 66, alongside the Santa Fe Railroad tracks at Houck, Arizona. The pit was reached by traveling about 1.4 miles west of Houck on U. S. Highway 66, turning northwesterly at the Pine Springs turn off, then traveling 3 miles westerly on an abandoned portion of U. S. Highway 66. The second dirt road west of the Querino Canyon Bridge led to the pit.

There were no changes in the operating procedures since the last inspection, therefore descriptions of operations concerning which no recommendations are made will not be repeated.

GENERAL HEALTH AND SAFETY

There had been no lost time injuries during the past three years.

First-aid supplies were kept at the main office, approximately 6 miles from the pit.

Interest was expressed in first-aid training; however, no one at the operation was trained in first-aid methods.

RECOMMENDATIONS

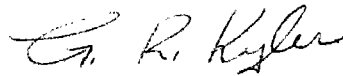
General Health and Safety

Key personnel should be trained in first-aid methods.

ACKNOWLEDGMENT

The cooperation of Mr. Elmer J. Gilstrap during this inspection is gratefully acknowledged.

Respectfully submitted,



G. R. Kyler
Mining Health and Safety Engineer

Approved:



A. C. Moschetti
Acting District Supervisor

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF MINES
HEALTH AND SAFETY ACTIVITY

DISTRICT H

1457 Ammons Street
Post Office Box 15037
Lakewood 15, Colorado

June 12, 1964

File No. 473

Mr. Elmer J. Gilstrap
Plant Manager
Arizona Silica Sand Company
General Delivery
Houck, Arizona

Subject: Health and Safety Inspection Report
Houck Pit
Arizona Silica Sand Company
Houck, Apache County, Arizona

Dear Mr. Gilstrap:

The enclosed report covers a Health and Safety inspection of the above-named mine made in compliance with Order No. 1940, April 4, 1944, by the Secretary of the Interior.

Any comments you desire to make concerning the inspection or report will be appreciated.

Sincerely yours,

A. C. Moschetti

A. C. Moschetti
Acting

J. Howard Bird
District Supervisor

Enclosure

cc: Commr. Indian Affairs, Wash., DC
Area Dir., Bur. of Ind. Aff., Gallup, New Mexico
Supt. Navajo Service, Window Rock, Ariz.
Chmn. Navajo Council, Window Rock, Ariz.
Tribal Mining Engr., Window Rock, Ariz.

1
DMR Code 42231-02-001-14412
Contract No. 14-20-603-6405

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF MINES
HEALTH AND SAFETY ACTIVITY

HEALTH AND SAFETY INSPECTION REPORT
HOUCK PIT
ARIZONA SILICA SAND COMPANY
NAVAJO INDIAN RESERVATION
HOUCK, APACHE COUNTY, ARIZONA

June 4, 1964

By

T. C. Lukins
Mining Health and Safety Engineer

Originating Office - Bureau of Mines
1457 Ammons Street, P. O. Box 15037, Lakewood 15, Colorado
J. Howard Bird, District Supervisor
Health and Safety, District H

HEALTH AND SAFETY INSPECTION REPORT
HOUCK PIT
ARIZONA SILICA SAND COMPANY
NAVAJO INDIAN RESERVATION
HOUCK, APACHE COUNTY, ARIZONA

June 4, 1964

By

T. C. Lukins
Mining Health and Safety Engineer

INTRODUCTION

This report is based on a health and safety inspection made in compliance with Order No. 1940, April 4, 1944, by the Secretary of the Interior authorizing the Bureau of Mines to inspect mines on Indian Lands and Government-leased lands on the Public Domain.

The purpose of the inspection and the report is to call to the attention of all concerned the hazards observed in the pit and plant during the inspection and to recommend means of correcting these hazards.

GENERAL INFORMATION

The main office of the Arizona Silica Sand Company was located approximately 33 miles west of Gallup, New Mexico, 1-1/2 miles south of Interstate Highway 66, alongside the Santa Fe Railroad tracks at Houck. The pit was reached by traveling about 1.4 miles further west to the Pine Spring turn off, north of Interstate Highway 66 and onto the old Interstate Highway 66 for another 3 miles. The second dirt road west and north of the Querino Canyon Bridge was the main access road to the pit site.

There were no changes in the procedures of the operation since the last inspection.

GENERAL HEALTH AND SAFETY

There were no lost time injuries for the past three years.

First aid supplies were kept at the main office which was approximately 6 miles from the pit site.

In case of an injury, hospital facilities at Gallup, New Mexico would be used.

No one at the operation was trained in first aid.

RECOMMENDATIONS

General Health and Safety

Key personnel should be trained in first aid methods.

ACKNOWLEDGMENT

The cooperation of Mr. Elmer J. Gilstrap during this inspection is gratefully acknowledged.

Respectfully submitted,

T. C. Lukins
T. C. Lukins

Mining Health & Safety Engineer

Approved:

A. C. Moschetti
A. C. Moschetti
Acting District Supervisor



IN REPLY REFER TO:

UNITED STATES
DEPARTMENT OF THE INTERIOR

GEOLOGICAL SURVEY

June 11, 1964
P. O. BOX 1716

CARLSBAD, NEW MEXICO 88220

REPORT OF EXAMINATION

ALMA MINE

GRAND L. SHUMWAY

MONUMENT VALLEY AREA, ARIZONA

By

C. M. McConnell

Deputy Regional Mining Supervisor

URANIUM PERMIT

No. 579

U. S. DEPARTMENT OF INTERIOR
GEOLOGICAL SURVEY
BRANCH OF MINING OPERATIONS
CONSERVATION DIVISION

The Alma mine, located on the Navajo Indian Reservation in the Monument Valley area, was examined June 4, 1964. This is the first report on the mine.

The Alma No.4 claim, Mining Permit No. 579, was issued to Jack Crank and approved November 2, 1962. The permit was assigned to Fritz-Erickson Mining Co. by approval of the Area Director on December 6, 1962 and the assignment was canceled by request on March 12, 1964. The permit was reassigned to Grant L. Shumway by approval dated April 22, 1964.

During the period of assignment to the Fritz-Erickson Mining Co. the property was drilled and a small ore body found at a depth of about 100 feet.

Presently the permittee and his brother have started the development of a mine. A slope on a 25° dip has been started. On the day of examination the open cut from the surface had been completed and the first round of the underground slope was being excavated. The vertical wall at the portal was about 15 feet high and the vertical height of the sides was about 25 feet. No slopes or loose material was noted along the sides of the open cut but the operators were cautioned to make numerous inspections of the walls for loose material and slips, especially after rainy periods, so that caving of the wall would not trap men working in the bottom of the cut.

The face of the cut was damp and it can be expected that considerable ground water will be encountered as the slope is extended. However, the slope is in an area where the formations are slightly upthrust, and the slope parallels

the dip of the beds, so the amount of water may not be as great as in other mines in the area where the slopes were driven across the dip of the formations. The direction of the slope is nearly due north. The ore body is in the Shinarump Formation.

The operators have received an allotment from the AEC and the ore will be shipped to the A-Z mill at Mexican Hat, Utah.

C. M. McConnell

C. M. McConnell

Deputy Regional Mining Supervisor

CMC:ep

Orig: Supt., Navajo Agency
cc: Comm., Office of Indian Affairs
: Navajo Tribal Mining Engineer
: Chief, Branch of Mining Operations
: U. S. Bureau of Mines, Denver
: State Mine Inspector, Phoenix, Arizona



DISTRICT H

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF MINES
HEALTH AND SAFETY ACTIVITY

1457 AMMONS STREET
POST OFFICE BOX 15037
LAKEWOOD 15, COLORADO
80215

JUN 25 1964

File No. 473

Allison and Haney
P. O. Box 637
Shiprock, New Mexico

Subject: Health and Safety Inspection Report
Allison and Haney Sand and Gravel Pit
Allison and Haney Company
Shiprock, San Juan County, New Mexico

Dear Sirs:

The enclosed reports cover a Health and Safety inspection of the above-named mine made in compliance with Order No. 1940, April 6, 1964, by the Secretary of the Interior.

Any comments you desire to make concerning the inspection or report will be appreciated.

Very truly yours,

A. C. Moschetti

A. C. Moschetti
Acting

J. Howard Bird
District Supervisor

Enclosures (2)

cc: Commr. Indian Affairs, Washington, D.C.
Area Dir., Bur. Ind. Affairs, Gallup, N.M.
Supt., Navajo Service, Window Rock, Ariz.
Chairman, Navajo Council, Window Rock, Ariz.
Tribal Mining Engr., Window Rock, Ariz. ✓

RECEIVED
THE NAVAJO TRIBAL
JUN 29 1964
MINING DEPT.

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF MINES
HEALTH AND SAFETY ACTIVITY

HEALTH AND SAFETY INSPECTION REPORT
ALLISON AND HANEY SAND AND GRAVEL PIT
ALLISON AND HANEY COMPANY
SHIPROCK, SAN JUAN COUNTY, NEW MEXICO

June 4, 1964

By

T. C. Lukins
Mining Health and Safety Engineer

Originating Office - Bureau of Mines
1457 Ammons Street, P. O. Box 15037, Lakewood, Colorado
J. Howard Bird, District Supervisor
Health and Safety, District H

HEALTH AND SAFETY INSPECTION REPORT
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ALLISON AND HANEY COMPANY
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INTRODUCTION

This report is based on a health and safety inspection made in compliance with Order No. 1940, April 4, 1944, by the Secretary of the Interior authorizing the Bureau of Mines to inspect mines on Indian Lands and Government-leased lands on the Public Domain.

The purpose of the inspection and the report is to call to the attention of all concerned the hazards observed in the mine and surface plant during the inspection and to recommend means of correcting these hazards.

Safety improvements made since the last inspection, December 3, 1963, are listed in this report. Recommendations repeated from the last report are indicated by asterisks.

GENERAL INFORMATION

The Allison and Haney Sand and Gravel Pit was 2 miles north of Shiprock, San Juan County, New Mexico alongside U. S. Highway 666. The mailing address is P. O. Box 637, Shiprock, New Mexico.

Employment varied with production demand and averaged 6 men.

Sand and gravel was produced from a single level pit. Excavated material was dozed directly into a hopper over the feed belt. A diesel-powered portable crushing and screening plant delivered sized fractions to steel bins or stockpiles from which the material was hauled by truck to storage piles or the washing plant.

Mr. Clifford Ford, plant superintendent, accompanied the writer during all parts of the inspection, and recommendations were discussed with him.

SURFACE

Moving parts of machinery in the crushing and screening plant were adequately guarded except the return belt drive where additional guarding of the pinch point was needed.

The sand washing plant was being readied for operation and required some guarding of moving parts with which employees may come in contact.

FIRE HAZARDS AND FIRE-FIGHTING EQUIPMENT

All oily rags and debris were burned periodically. An adequate number of fire extinguishers were provided at the shop. A "No Smoking" sign was not observed at the main fuel pump.

ELECTRICITY AND ILLUMINATION

The main electric power switch for the sand washing plant was not provided with a lock during non-operating hours.

There were several exposed wires that were connected to the main switch box that were no longer used in the operation.

The ground wire on the electric plug of the $\frac{1}{2}$ -inch electric drill cord was broken.

GENERAL HEALTH AND SAFETY

A stretcher and first-aid kit were kept at the scale house office. Hospital facilities were about $\frac{3}{4}$ -mile from the pit site, and could be contacted by telephone.

The company maintained no formal safety program.

There were no lost time injuries since the previous inspection.

All men wore hard hats around the operation.

SAFETY IMPROVEMENTS

The following improvements were made since the last inspection:

Surface

All chain and belt drives within 7 feet of the floor or walkway, referred to in the previous report, were provided with guards.

The compressed gas cylinders used for heating at the main machine shop were removed.

Electricity and Illumination

The non-metallic cable and TW-type wire hanging on the steel roof joists of the main machine shop were removed and not replaced.

The electrically-powered, garage-type compressor located outside the shop was provided with a junction box and proper insulation.

The following improvement was made during the inspection:

Surface

A loose board lying near the sand washing plant contained several protruding nails. These nails were bent over and the board removed from the area.

RECOMMENDATIONS

Surface

Additional guarding should be provided for the return belt drive of the crusher and screening plant.

All chain and belt drives of the sand washing plant, within 7 feet of the ground or walkway, or which employees may come into contact, should be adequately guarded.

Fire Hazards and Fire-Fighting Equipment

A "No Smoking" sign should be provided at the main fuel pump station.

Electricity and Illumination

A lock should be provided on the main power switch of the sand washing plant for the protection of trespassers.

Exposed electric wires should be removed or disconnected from the main electric power.

*All hand-held electrical tools should be frame grounded.

General Health and Safety

Key personnel should be trained in first-aid methods at least once every two years.

ACKNOWLEDGMENT

The cooperation of pit officials and employees during this inspection is gratefully acknowledged.

Respectfully submitted,

T. C. Lukins

T. C. Lukins
Mining Health and Safety Engineer

Approved:

A. C. Moschetti

A. C. Moschetti
Acting District Supervisor



IN REPLY REFER TO:
PERMIT #584

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
P. O. BOX 1716
CARLSBAD, NEW MEXICO
April 20, 1964

**MINE INSPECTION REPORT
A & B MINING COMPANY
NAVAJO RESERVATION
SAN JUAN COUNTY, NEW MEXICO**

PERMIT # 584

by
**Howard B. Nickelson
Mining Engineer**

**U. S. DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
BRANCH OF MINING OPERATIONS
CONSERVATION DIVISION**

The property was examined on April 17, 1964. Mr. Ray Williams, operator, accompanied the inspector. The mine is opened by a flat incline. The ore and waste are removed from the mine by a diesel powered Wagner buggy. The materials are loaded by a diesel powered Oliver track end loader. The buggy is U. S. Bureau of Mines approved but the end loader is not. The mine is ventilated by a 5,000 cfm fan, located on the surface and blowing through metal vent line to the working area. Ventilations appears adequate. Ground conditions in the working area appear well barred down, but several weeks ago one of the miners was injured by falling rock. The rock hit him on the hard hat and forced his face into the muck pile causing cuts on his face. The hard hat which was made of fiberglass or plastic caused additional cuts on his scalp from the head band fastener on the hat. Even though the poor design of the hat caused severe cuts on his scalp the hat probably saved his life.

Housekeeping about the surface and underground was good. Powder and caps are kept under lock at all times. Two Navajo miners are employed

Howard B. Nickelson

**Howard B. Nickelson
Mining Engineer**

Orig. to: Supt., Navajo Agency
cca Comm., Office of Indian Affairs
: Navajo Tribal Mining Engineer ✓
: Chief, Branch of Mining Operations
: Bureau of Mines, Denver
: Files

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF MINES
HEALTH AND SAFETY ACTIVITY

HEALTH AND SAFETY INSPECTION REPORT
ENOS JOHNSON MINE (URANIUM)
A AND B MINING COMPANY
NAVAJO INDIAN RESERVATION
SANOSTEE, SAN JUAN COUNTY, NEW MEXICO

December 9, 1963

By

R. C. Derzay
Mining Health and Safety Engineer
Bureau of Mines

and

H. Nickelson
Mining Engineer
Geological Survey

Originating Office - Bureau of Mines
1457 Ammons Street, P. O. Box 15037, Lakewood, Colorado 80215
J. Howard Bird, District Supervisor
Health and Safety District H

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A AND B MINING COMPANY
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SANOSTEE, SAN JUAN COUNTY, NEW MEXICO

December 9, 1963

By

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Geological Survey

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The inspection was made jointly by the Bureau of Mines and Geological Survey in accordance with instructions from the Assistant Secretary--Mineral Resources, Department of the Interior.

The purpose of the inspection and the report is to call to the attention of all concerned the hazards observed in the mine and surface plant during the inspection and to recommend means of correcting these hazards.

Safety improvements made since the last inspection, October 10, 1963, are listed in this report.

GENERAL INFORMATION

Ray Williams, Partner, A and B Mining Company, P. O. Box 536, Little Water, New Mexico, operated the Enos Johnson underground uranium mine with the help of two men. The mine was worked single shift, 5 days a week. The mine is about 9 miles west of Sanostee.

The mine was opened by several interconnecting adits in the side of a sandstone bluff. All but one of the adits had been sealed off to control

the flow of ventilating air; thus, second exits were available in the event of emergency. The adit, about 9 feet high, $7\frac{1}{2}$ feet wide, was inclined downward about 5 degrees. The ore horizon was about 2 feet thick, necessitating resuing.

SURFACE

The compressor was equipped with safety and drain valves and the engine exhaust gases were vented well away from the air inlets.

Buildings had not been erected on the property; supplies were stored inby the portals of short adits near the operating adit.

FIRE HAZARDS AND FIRE-FIGHTING EQUIPMENT

A relatively small amount of timber was used in the mine. Fire extinguishers were kept readily available on the mobile equipment. Fuel was stored in 55-gallon drums in the short storage adits.

STORAGE AND USE OF EXPLOSIVES

Dynamite and detonators were properly stored in separate, adit-type magazines; 11 boxes of dynamite were in the explosives magazine. Unused explosives were not left in the mine.

TRAVELWAYS

Travel through the mine was done with relative ease and safety. The haulageway was well compacted and free of obstacles.

LOADING, HAULING AND DRILLING

Underground loading was done with a small diesel-powered loader which did not bear a U. S. Bureau of Mines approval plate. The diesel-powered ore carrier bore U. S. Bureau of Mines approval 24-24 and required 2,000 c.f.m. of ventilation. As one of the units of mobile diesel-powered equipment used in this mine has not been approved by the Bureau of Mines, no action during this survey shall be interpreted as official approval of this equipment. The units were equipped with efficient lights.

Water was used with the jackleg drill when collaring and drilling.

GROUND CONTROL

The sandstone back in the haulageway and active mine areas appeared solid. A scaling bar was provided.

A few rocks above the adit portal might be loosened by thawing and freezing.

VENTILATION

A diesel-powered centrifugal fan on the surface blew 4300 c.f.m. of air into the mine. The tubing connected to this fan ended a few feet beyond a suspended brattice. An electrically-powered fan about 100 feet from the discharge of the first fan blew 3200 c.f.m. of air to the North Heading or 3000 c.f.m. of air to the West Heading. One heading was worked at a time.

About 600 c.f.m. of air was being recirculated, probably caused by the velocity and turbulence of the air leaving the vent tubing just beyond the brattice.

RADIATION

Radon-daughter concentrations measured and other data are listed in Table 1. Table 2 lists the projected average daily exposure levels experienced by the miners at the time of the inspection.

Table 1

Location, Time, Number of Men, Operation	Radon-daughter Concentration W.L. ^{1/}	V ₁ c.f.m. ^{2/}	V ₂ c.f.m. ^{3/}
North Heading, 10:50 a.m., 1 man hand mucking, 1 man preparing to drill	5.7	3200	8500
West Heading, 11:18 a.m.	4.6	3000	7000
Haulageway, 11:28 a.m.	6.5	4300	12,000

^{1/} Reported in multiples of a safe working level (W.L.).

^{2/} Measured ventilation

^{3/} The amount of air required to reduce the radon daughters to one W.L. from equation $V_2 = V_1 (W.L.)^{0.56}$.

Table 2

No. Men	Location Operation	Estimated average full shift exposure to radon-daughters ^{1/}
2	Stopes, mining	3.8
1	Various; tramming, supervising	2.5

^{1/} These average levels are estimated by weighting the radon-daughter concentrations in these various places by the time spent in them. Main areas of exposure are generally included such as, working place, lunch, travel to and from stope, securing supplies, etc.

QUALITY OF AIR

Direct reading field test instruments were used to measure CO (carbon monoxide) and NO₂ (nitrogen dioxide) concentrations in the mine air during this survey.

In addition, a mine air sample was collected in a vacuum bottle during the survey and was analyzed in the Bureau of Mines laboratory, Denver, Colorado.

Both field test and laboratory analytical results are shown in Table 3.

Table 3

Sample No.	Place, time	O ₂	CO ₂	PERCENT CO	CH ₄	N ₂	Ppm* NO ₂
	North Heading, 10:55am			0.000			0
Z-318	North Heading, 10:50am	20.84	0.05		0.00	79.11	
	West Heading, 11:20am			0.000			0

*Parts per million

Air for ventilation is considered to be of satisfactory quality when it contains at least 19.5 percent O₂ (oxygen), not more than 0.5 percent CO₂ (carbon dioxide), and no harmful quantities of dust or noxious gases. The threshold limit value for CO is 0.01 percent and for NO₂ is 5 parts per million.

The results listed in Table 3 indicate that the air was of satisfactory quality with respect to these gases at the times and places shown.

ELECTRICITY

A 10-kw diesel generator provided electrical power for the mine. The unit was frame grounded.

GENERAL HEALTH AND SAFETY

The men wore safety-toed shoes and hard hats underground. Electric cap lamps were used for underground illumination. First-aid supplies and a stretcher were readily available.

SAFETY IMPROVEMENTS

The following safety improvements were made since the previous survey.

Ventilation

The ventilation was adjusted to minimize recirculation of air.

A more substantial brattice was erected to minimize recirculation of air.

Radiation

The ventilation fans were run for about an hour before and after shift.

RECOMMENDATIONS

Loading, Hauling and Drilling

Only Bureau of Mines approved^{1/} mobile diesel-powered equipment should be used underground. Bureau of Mines approved equipment should be used to replace or add to the mobile diesel-powered equipment now in use underground when replacement of present equipment, or additional equipment, is necessary.

Ground Control

The rocks above the adit portal should be removed.

Radiation

Measures to reduce the men's average, full-shift exposure to radon-daughter concentrations should be taken.

^{1/} Bureau of Mines approvals for mobile diesel-powered equipment are issued to the manufacturer only after application to and tests by the Branch of Electrical-Mechanical Testing, Bureau of Mines, Pittsburgh 13, Pennsylvania. Approved equipment is identified by a Bureau of Mines approval plate attached to each complete unit.

ACKNOWLEDGMENT

The cooperation of Mr. Williams and mine employees during this inspection is gratefully acknowledged.

Respectfully submitted,

R. C. Derzay

R. C. Derzay
Mining Health and Safety Engineer

H. Nickelson

H. Nickelson
Mining Engineer

Approved:

A. C. Moschetti

A. C. Moschetti
Acting District Supervisor

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF MINES
Health and Safety Activity

DISTRICT H

1457 Ammons St.
P. O. Box 15037
Lakewood, Colorado 80215

DEC 23 1963

File No. *437.2

Ray Williams, Partner
A and B Mining Company
P. O. Box 536
Little Water, New Mexico

Subject: Health and Safety Inspection Report
Enos Johnson Mine
A and B Mining Company
Sanostee, San Juan County, New Mexico

Dear Mr. Williams:

The enclosed reports cover a Health and Safety inspection of the above-named mine made in compliance with Order No. 1940, April 4, 1944, by the Secretary of the Interior.

Any comments you desire to make concerning the inspection or report will be appreciated.

Very truly yours,

A. C. Moschetti
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Enclosures

cc: Commr. Indian Affairs
Area Dir., Bur. Ind. Aff.
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Tribal Mining Engineer

UNITED STATES
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HEALTH AND SAFETY ACTIVITY

HEALTH AND SAFETY INSPECTION REPORT
ENOS JOHNSON MINE (URANIUM)
A AND B MINING COMPANY
NAVAJO INDIAN RESERVATION
SANOSTEE, SAN JUAN COUNTY, NEW MEXICO

December 9, 1963

By

R. C. Derzay
Mining Health and Safety Engineer
Bureau of Mines

and

H. Nickelson
Mining Engineer
Geological Survey

Originating Office - Bureau of Mines
1457 Ammons Street, P. O. Box 15037, Lakewood, Colorado 80215
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the flow of ventilating air; thus, second exits were available in the event of emergency. The adit, about 9 feet high, $7\frac{1}{2}$ feet wide, was inclined downward about 5 degrees. The ore horizon was about 2 feet thick, necessitating resuing.

SURFACE

The compressor was equipped with safety and drain valves and the engine exhaust gases were vented well away from the air inlets.

Buildings had not been erected on the property; supplies were stored inby the portals of short adits near the operating adit.

FIRE HAZARDS AND FIRE-FIGHTING EQUIPMENT

A relatively small amount of timber was used in the mine. Fire extinguishers were kept readily available on the mobile equipment. Fuel was stored in 55-gallon drums in the short storage adits.

STORAGE AND USE OF EXPLOSIVES

Dynamite and detonators were properly stored in separate, adit-type magazines; 11 boxes of dynamite were in the explosives magazine. Unused explosives were not left in the mine.

TRAVELWAYS

Travel through the mine was done with relative ease and safety. The haulageway was well compacted and free of obstacles.

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Acting District Supervisor

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF MINES
Health and Safety Activity

DISTRICT H

1457 Ammons St.
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DEC 23 1963

File No. *437.2

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cc: Commr. Indian Affairs
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Supt. Navajo Service
Chairman, Navajo Council ✓
Tribal Mining Engineer

RECEIVED
THE NATIONAL MINE
DEC 30 1963
MINING DEPT.

OFFICE OF THE CHAIRMAN
THE NAVAJO TRIBES
DEC 23 1963

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF MINES
HEALTH AND SAFETY ACTIVITY

HEALTH AND SAFETY INSPECTION REPORT
ENOS JOHNSON MINE (URANIUM)
A AND B MINING COMPANY
NAVAJO INDIAN RESERVATION
SANOSTEE, SAN JUAN COUNTY, NEW MEXICO

December 9, 1963

By

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Geological Survey

Originating Office - Bureau of Mines
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J. Howard Bird, District Supervisor
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Travel through the mine was done with relative ease and safety. The haulageway was well compacted and free of obstacles.

LOADING, HAULING AND DRILLING

Underground loading was done with a small diesel-powered loader which did not bear a U. S. Bureau of Mines approval plate. The diesel-powered ore carrier bore U. S. Bureau of Mines approval 24-24 and required 2,000 c.f.m. of ventilation. As one of the units of mobile diesel-powered equipment used in this mine has not been approved by the Bureau of Mines, no action during this survey shall be interpreted as official approval of this equipment. The units were equipped with efficient lights.

Water was used with the jackleg drill when collaring and drilling.

GROUND CONTROL

The sandstone back in the haulageway and active mine areas appeared solid. A scaling bar was provided.

A few rocks above the adit portal might be loosened by thawing and freezing.

VENTILATION

A diesel-powered centrifugal fan on the surface blew 4300 c.f.m. of air into the mine. The tubing connected to this fan ended a few feet beyond a suspended brattice. An electrically-powered fan about 100 feet from the discharge of the first fan blew 3200 c.f.m. of air to the North Heading or 3000 c.f.m. of air to the West Heading. One heading was worked at a time.

About 600 c.f.m. of air was being recirculated, probably caused by the velocity and turbulence of the air leaving the vent tubing just beyond the brattice.

RADIATION

Radon-daughter concentrations measured and other data are listed in Table 1. Table 2 lists the projected average daily exposure levels experienced by the miners at the time of the inspection.

Table 1

Location, Time, Number of Men, Operation	Radon-daughter Concentration W.L. ^{1/}	V ₁ c.f.m. ^{2/}	V ₂ c.f.m. ^{3/}
North Heading, 10:50 a.m., 1 man hand mucking, 1 man preparing to drill	5.7	3200	8500
West Heading, 11:18 a.m.	4.6	3000	7000
Haulageway, 11:28 a.m.	6.5	4300	12,000

^{1/} Reported in multiples of a safe working level (W.L.).

^{2/} Measured ventilation

^{3/} The amount of air required to reduce the radon daughters to one W.L. from equation $V_2 = V_1 (W.L.)^{0.56}$.

Table 2

No. Men	Location Operation	Estimated average full shift exposure to radon-daughters ^{1/}
2	Stopes, mining	3.8
1	Various; tramming, supervising	2.5

^{1/} These average levels are estimated by weighting the radon-daughter concentrations in these various places by the time spent in them. Main areas of exposure are generally included such as, working place, lunch, travel to and from stope, securing supplies, etc.

QUALITY OF AIR

Direct reading field test instruments were used to measure CO (carbon monoxide) and NO₂ (nitrogen dioxide) concentrations in the mine air during this survey.

In addition, a mine air sample was collected in a vacuum bottle during the survey and was analyzed in the Bureau of Mines laboratory, Denver, Colorado.

Both field test and laboratory analytical results are shown in Table 3.

Table 3

Sample No.	Place, time	PERCENT					Ppm*
		O ₂	CO ₂	CO	CH ₄	N ₂	NO ₂
	North Heading, 10:55am			0.000			0
Z-318	North Heading, 10:50am	20.84	0.05		0.00	79.11	
	West Heading, 11:20am			0.000			0

*Parts per million

Air for ventilation is considered to be of satisfactory quality when it contains at least 19.5 percent O₂ (oxygen), not more than 0.5 percent CO₂ (carbon dioxide), and no harmful quantities of dust or noxious gases. The threshold limit value for CO is 0.01 percent and for NO₂ is 5 parts per million.

The results listed in Table 3 indicate that the air was of satisfactory quality with respect to these gases at the times and places shown.

ELECTRICITY

A 10-kw diesel generator provided electrical power for the mine. The unit was frame grounded.

GENERAL HEALTH AND SAFETY

The men wore safety-toed shoes and hard hats underground. Electric cap lamps were used for underground illumination. First-aid supplies and a stretcher were readily available.

SAFETY IMPROVEMENTS

The following safety improvements were made since the previous survey.

Ventilation

The ventilation was adjusted to minimize recirculation of air.

A more substantial brattice was erected to minimize recirculation of air.

Radiation

The ventilation fans were run for about an hour before and after shift.

RECOMMENDATIONS

Loading, Hauling and Drilling

Only Bureau of Mines approved^{1/} mobile diesel-powered equipment should be used underground. Bureau of Mines approved equipment should be used to replace or add to the mobile diesel-powered equipment now in use underground when replacement of present equipment, or additional equipment, is necessary.

Ground Control

The rocks above the adit portal should be removed.

Radiation

Measures to reduce the men's average, full-shift exposure to radon-daughter concentrations should be taken.

^{1/} Bureau of Mines approvals for mobile diesel-powered equipment are issued to the manufacturer only after application to and tests by the Branch of Electrical-Mechanical Testing, Bureau of Mines, Pittsburgh 13, Pennsylvania. Approved equipment is identified by a Bureau of Mines approval plate attached to each complete unit.

ACKNOWLEDGMENT

The cooperation of Mr. Williams and mine employees during this inspection is gratefully acknowledged.

Respectfully submitted,

R. C. Derzay

R. C. Derzay
Mining Health and Safety Engineer

H. Nickelson

H. Nickelson
Mining Engineer

Approved:

A. C. Moschetti

A. C. Moschetti
Acting District Supervisor

R-17
DMR Code No. 43713-29-031-10946
Laguna Indian Reservation Lease No.1

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF MINES
HEALTH AND SAFETY ACTIVITY

HEALTH AND SAFETY INSPECTION REPORT
PAGUATE MINE (OPEN PIT URANIUM)
ANACONDA COMPANY
LAGUNA INDIAN RESERVATION
LAGUNA, VALENCIA COUNTY, NEW MEXICO

November 19, 1963

By

Walter Bank
Mining Health and Safety Engineer
Bureau of Mines

and

J. W. Nager
Mining Engineer
Geological Survey

RECEIVED
THE NAVAJO TRIBE

DEC 20 1963

MINING DEPT.

Originating Office - Bureau of Mines
1457 Ammons Street, P. O. Box 15037, Lakewood, Colorado 80215
J. Howard Bird, District Supervisor
Health and Safety District H

HEALTH AND SAFETY INSPECTION REPORT
PAGUATE MINE (OPEN PIT URANIUM)
ANACONDA COMPANY
LAGUNA INDIAN RESERVATION
LAGUNA, VALENCIA COUNTY, NEW MEXICO

November 19, 1963

By

Walter Bank
Mining Health and Safety Engineer
Bureau of Mines

and

J. W. Hager
Mining Engineer
Geological Survey

INTRODUCTION

This report is based on a health and safety inspection made in compliance with Order. No. 1940, April 4, 1944, by the Secretary of the Interior authorizing the Bureau of Mines to inspect mines on Indian Lands and Government-leased lands on the Public Domain.

The inspection was made jointly by the Bureau of Mines and Geological Survey in accordance with instructions from the Assistant Secretary--Mineral Resources, Department of the Interior.

The purpose of the inspection and the report is to call to the attention of all concerned the hazards observed in the mine and surface plant during the inspection and to recommend means of correcting these hazards.

Safety improvements made since the last inspection on June 11, 1963, are listed in this report. Descriptions of physical features and operating procedures included in previous reports concerning which no recommendations are made in this report are not repeated here.

GENERAL INFORMATION

The Paguate open pit mine is on the Laguna Indian Reservation about 9 miles north of Laguna in Valencia County, New Mexico. It is about one

the northwest of the Jackpile mine. Officials of the Anaconda Company were:

A. F. Fitch
John Herndon
Harry Alexander
Dave King

Jack Sabo

Manager
Mine Superintendent
Mine Foreman
Blasting and
Assistant Mine Foreman
Safety Engineer

The Company address was Post Office Box 638, Grants, New Mexico.

Stripping was continuing at the Paguate Mine. All ore shipments were made from the Jackpile stockpile, which contained approximately 400,000 tons of ore, and which will be exhausted in 1965. In mid-1964, ore from the Paguate stockpile will be phased into the circuit.

The mines provided employment for 103 hourly-rated personnel and 15 salaried personnel. Work was done on a one 8-hour shift, 5 days a week schedule except for maintenance work as described below.

SURFACE

The hydraulic presses in the main repair shop and in the shovel repair shop were provided with shields to protect the operator, and nearby employees, from metal flying out from the press. In the welding shop, fumes from welding operations at the bench escaped into the general atmosphere; although a flexible-tube exhaust hood was available here, this exhaust system was not used. A chimney of a heater was not exhausted to the outside air; and while a chimney extension was available, it had not been installed.

At the fuel loading dock, some ethylene glycol antifreeze had been spilled. The supervisor gave orders to clean up this spillage immediately. One empty gas cylinder was not secured in the warehouse yard; all other gas cylinders noted were properly secured.

A new parking lot had been constructed for use of the 16 trucks. Individual stalls were provided for each truck, and the lubrication crew serviced the trucks on the 3:00 p.m. to 11:00 p.m. shift.

FIRE HAZARDS AND FIRE-FIGHTING EQUIPMENT

All fuel storage areas were adequately isolated and all were posted. One butane tank near the "boneyard" had a badly-faded "No Smoking" sign.

STORAGE AND USE OF EXPLOSIVES

The ammonium nitrate-fuel oil magazine, as described in the last report, was in use. A new dock-loading ramp made of magnesium (non-sparking) had been provided. The very clean magazine contained about 150 sacks of pre-mixed AN/FO plus 60 boxes of E cord (20-grain) and 25 boxes of 50 grain Primacord.

The dynamite magazine door was constructed of 1/4-inch steel plate backed by 5-inches of wood. The magazine contained 25 cases of waterproof dynamite dated June, 1962 and December, 1962; plus about 100 cases of 45 percent dynamite dated January, 1963. The nails in the magazine floor were countersunk.

The detonator magazine was described in previous reports. It contained about 500 caps and connectors.

ELECTRICITY

Each stall in the new parking lot was provided with overhead lights to permit servicing the trucks at night. Each truck motor was fitted with a 1000-watt heater unit for easier starting in cold weather; and this heater unit was connected to a frame-grounded breaker box mounted at each stall.

GENERAL HEALTH AND SAFETY

The safety and first-aid training program was maintained under the direction of the safety engineer. At the time of the inspection the employees had worked 620 days with no lost-time accidents.

SAFETY IMPROVEMENTS

A. The following are safety improvements which were made between inspections:

Surface

The hydraulic presses in the shops were provided with screen guards.

Storage and Use of Explosives

The door of the dynamite magazine had been made bullet-resistant by the addition of 3 inches of wood.

The nails in the flooring of the dynamite magazine had been countersunk.

B. The following is a safety improvement which was made during the inspection:

Surface

Ethylene glycol spillage at the loading dock was removed.

RECOMMENDATIONS

Surface

The flexible-tube exhaust hood, located at the welding bench in the welding shop, should be used when feasible.

The heater in the welding shop should be provided with an extension on the chimney, and this chimney should exhaust to the outside.

All compressed gas cylinders should be secured against upset.

Fire Hazards and Fire-Fighting Equipment

The butane tank near the "boneyard" should be posted with a prominent "No Smoking" sign.

ACKNOWLEDGMENT

The cooperation of mine officials and employees during this inspection is gratefully acknowledged.

Respectfully submitted,

Walter Bank

Walter Bank
Mining Health and Safety Engineer

J. W. Hager

J. W. Hager
Mining Engineer

Approved:

A. C. Moschetti

A. C. Moschetti
Acting District Supervisor

0
DMR Code 42231-02-001-14412
Contract No, 14-20-603--6405

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF MINES
HEALTH AND SAFETY ACTIVITY

HEALTH AND SAFETY INSPECTION REPORT
HOUCK PIT
ARIZONA SILICA SAND COMPANY
NAVAJO INDIAN RESERVATION
HOUCK, APACHE COUNTY, ARIZONA

December 5, 1963

By

G. R. Kyler
Mining Health and Safety Engineer
Bureau of Mines

and

C. M. McConnell
Deputy Regional Mining Supervisor
Geological Survey

1457 AMMONS STREET
P. O. BOX 15037
LAKEWOOD, COLORADO 80215
J. HOWARD BIRD
DISTRICT SUPERVISOR
HEALTH AND SAFETY DISTRICT H

Originating Office - Bureau of Mines
1457 Ammons Street, P. O. Box 15037, Lakewood, Colorado 80215
J. Howard Bird, District Supervisor
Health and Safety District H

HEALTH AND SAFETY INSPECTION REPORT
HOUCK PIT
ARIZONA SILICA SAND COMPANY
NAVAJO INDIAN RESERVATION
HOUCK, APACHE COUNTY, ARIZONA

December 5, 1963

By

G. R. Kyler
Mining Health and Safety Engineer
Bureau of Mines

and

C. M. McConnell
Deputy Regional Mining Supervisor
Geological Survey

INTRODUCTION

This report is based on a health and safety inspection made in compliance with Order No. 1940, April 4, 1944, by the Secretary of the Interior authorizing the Bureau of Mines to inspect mines on Indian Lands and Government-leased lands on the Public Domain.

The inspection was made jointly by the Bureau of Mines and Geological Survey in accordance with instructions from the Assistant Secretary--Mineral Resources, Department of the Interior.

The purpose of the inspection and the report is to call to the attention of all concerned the hazards observed in the mine and surface plant during the inspection and to recommend means of correcting these hazards.

GENERAL INFORMATION

The Houck Pit of the Arizona Silica Sand Company was located approximately 6 miles west of Houck, Apache County, Arizona in Sec. 29, T. 22 N., R. 29 E., G&SR. The office is at the screening and loading facilities located alongside the Santa Fe Railroad tracks at Houck. The screening and loading facilities did not fall under the scope of this inspection and were not inspected.

Portions of the sand dunes which met specifications were loaded by a front-end loader into highway-type dump trucks which transported the sand to the screening plant. The three sized fractions were used to sand-fracture petroleum wells. Production and employment varied with demand for the product, averaging 250 tons a day with 3 pit employees. Mr. Elmer J. Gilstrap was the plant manager. The mailing address General Delivery, Houck, Arizona.

SURFACE

The surface facilities at the pit consisted of a large wooden tool box and a drum of lubricant.

FIRE HAZARDS AND FIRE-FIGHTING FACILITIES

Fire hazards were not observed.

STORAGE AND USE OF EXPLOSIVES

Explosives were not used in normal mining operations.

TRAVELWAYS

All haul roads were well maintained and did not pass near embankments.

LOADING AND HAULING

The sand was selectively loaded by a front-end loader into highway-type dump trucks. The loader bucket could reach the top of the bank.

GROUND CONTROL

The banks of the pit were approximately 12 feet high. The pit walls were sloped back approximately 0.5 feet for 1-foot of rise. The material appeared to stand well on this slope. Undercut banks were not observed.

DUST

The sand was moist and high concentrations of air borne dust were not observed, therefore, samples were not taken.

GENERAL HEALTH AND SAFETY

The loader operator wore a hard hat. Truck drivers were not exposed to overhead hazards.

ACKNOWLEDGMENT

The cooperation of officials and employees during this inspection is gratefully acknowledged.

Respectfully submitted,

/s/G. R. Kyler
G. R. Kyler
Mining Health and Safety Engineer

C. M. McConnell
C. M. McConnell
Deputy Regional Mining Supervisor

Approved:

A. C. Moschetti
A. C. Moschetti
Acting District Supervisor



UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF MINES

HEALTH AND SAFETY ACTIVITY

DISTRICT H

1457 AMMONS STREET
POST OFFICE BOX 15037
LAKEWOOD 15, COLORADO
80215

DEC 26 1963

File No. 473

Allison and Haney
General Delivery
Shiprock, New Mexico

Subject: Health and Safety Inspection Report
Allison and Haney Sand and Gravel Pit
Allison and Haney Company
Shiprock, San Juan County, New Mexico

Gentlemen:

The enclosed reports cover a Health and Safety inspection of the above-named mine made in compliance with Order No. 1940, April 4, 1944, by the Secretary of the Interior.

Any comments you desire to make concerning the inspection or report will be appreciated.

Sincerely yours,

A. C. Moschetti

A. C. Moschetti
Acting

J. Howard Bird
District Supervisor

RECEIVED
THE NAVAJO TRIBE

DEC 30 1963

MINING DEPT.

Enclosures

cc: Commr. Indian Affairs, Wash. D.C.
Area Dir., Bur. Ind. Aff., Gallup, N.M.
Supt., Navajo Service, Window Rock, Ariz.
R. Nakai, Chairman, Nav. Council, Window Rock, Ariz.
C. V. Collins, Tribal Mining Engr., Window Rock, Ariz. ✓

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DMR Code 414-61-29-14411
Permit No. 14-20-603-6173

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF MINES
HEALTH AND SAFETY ACTIVITY

HEALTH AND SAFETY INSPECTION REPORT
ALLISON AND HANEY SAND AND GRAVEL PIT
ALLISON AND HANEY COMPANY
SHIPROCK, SAN JUAN COUNTY, NEW MEXICO

December 3, 1963

By

G. R. Kyler
Mining Health and Safety Engineer
Bureau of Mines

and

C. M. McConnell
Deputy Regional Mining Supervisor
Geological Survey

Originating Office - Bureau of Mines
1457 Ammons Street, P. O. Box 15037, Lakewood, Colorado 80215
J. Howard Bird, District Supervisor
Health and Safety, District H

HEALTH AND SAFETY INSPECTION REPORT
ALLISON AND HANEY SAND AND GRAVEL PIT
ALLISON AND HANEY COMPANY
SHIPROCK, SAN JUAN COUNTY, NEW MEXICO

December 3, 1963

By

G. R. Kyler
Mining Health and Safety Engineer
Bureau of Mines

and

C. M. McConnell
Deputy Regional Mining Supervisor
Geological Survey

INTRODUCTION

This report is based on a health and safety inspection made in compliance with Order No. 1940, April 4, 1944, by the Secretary of the Interior authorizing the Bureau of Mines to inspect mines on Indian Lands and Government-leased lands on the Public Domain.

The inspection was made jointly by the Bureau of Mines and Geological Survey in accordance with instructions from the Assistant Secretary--Mineral Resources, Department of the Interior.

The purpose of the inspection and the report is to call to the attention of all concerned the hazards observed in the mine and surface plant during the inspection and to recommend means of correcting these hazards.

GENERAL INFORMATION

The Allison and Haney Sand and Gravel Pit is about 2 miles north of Shiprock, San Juan County, New Mexico alongside U. S. Highway 666. The permit covers Sec. 24 and 25, T. 30 N., R. 18 W., N.M.P.M. A ready-mix concrete plant was operated in conjunction with the sand and gravel operation. The mailing address is General Delivery, Shiprock, New Mexico.

Employment varied with product demand and averaged 7 men. The pit produced specification sand and aggregate.

Sand and gravel is produced from a single level pit having walls approximately 12 feet high. Excavated material was dozed directly into a bin over the feed belt. A diesel-powered portable crushing and screening plant delivered the sized fractions to steel bins from which the material was hauled by truck to storage piles.

SURFACE

A concrete shop building was located approximately midway between the pit area and the concrete batch plant. A frame scale house and office was located near the batch plant. Fuel was stored in a buried tank and dispensed through a commercial-type dispensing pump located near the scale house. Closed containers of lubricants were stored in the shop building and a commercial adsorbent was used to clean up spill.

A garage-type air compressor located near the shop building was not equipped with a suitable guard on the V-belt drive. The screen-shaker, located in the laboratory building adjacent to the shop, was driven by an unguarded V-belt.

The crushing and screening plant was dismantled for major repair work and the completeness of mechanical guarding could not be ascertained; however, those portions of the equipment not dismantled appeared to be adequately guarded.

The shop building was heated by a stove fired with liquid-petroleum-gas supplied from two cylinders standing unsecured in the parking lot, approximately 6 feet from the shop wall.

FIRE HAZARDS AND FIRE-FIGHTING EQUIPMENT

Fire extinguishers were provided at the fueling point and shop. Parts were cleaned with diesel fuel.

No fire hazards were observed.

LOADING AND HAULING

Alluvial material was pushed into a feeder bin by a dozer. Sized material was transported by trucks to storage piles. Sized material was loaded from the stock piles into either the concrete batch plant or truck by a front-end loader. Haul roads and areas around stock piles were well maintained and none of the haul roads were located near the edge of pits.

GROUND CONTROL

All pit walls were at the angle of natural repose and overhanging banks were not observed.

DUST

High concentrations of air-borne dust were not observed.

ELECTRICITY AND ILLUMINATION

With the exception of the fuel dispensing pump, all electrically powered equipment was located in the vicinity of the shop. Electric wiring in

the shop consisted of surface-mounted, non-metallic cable and TW-type wire hanging on the steel roof joists. These wires were not protected against mechanical damage. Lighting was provided in the shop by globes in sockets attached to the TW feeder by drop wires. Two of these sockets were of the metal cased type.

The electrically-powered, garage-type compressor located outside the shop was powered through metallic sheathed type BX cable. The junction of the cable and the motor leads was not protected by a junction box and insulated bushings were not provided in the ends of the BX cable.

The ½-inch electric drill used around the shop was not equipped with a frame ground.

GENERAL HEALTH AND SAFETY

The company maintained no formal safety program. Protective equipment was available for use when cutting and welding.

RECOMMENDATIONS

Surface

All chain and belt drives within 7 feet of a floor or walkway should be adequately guarded.

All compressed gas cylinders should be secured against accidental upset and protected from possible damage from vehicles.

Electricity and Illumination

All electrical wiring should conform to applicable local wiring codes and the National Electrical Code.

All hand-held electrical tools should be frame grounded.

ACKNOWLEDGMENT

The cooperation of pit officials during this inspection is gratefully acknowledged.

Respectfully submitted,

/s/ G. R. Kyler
G. R. Kyler
Mining Health and Safety Engineer

C. M. McConnell
C. M. McConnell
Deputy Regional Mining Supervisor

Approved:

A. C. Moschetti
A. C. Moschetti
Acting District Supervisor

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF MINES
HEALTH AND SAFETY ACTIVITY

DISTRICT H

1457 Ammons Street
P. O. Box 15037
Lakewood, Colorado 80215

January 3, 1964

File No. 473

Allison and Haney
General Delivery
Shiprock, New Mexico

Gentlemen:

It was noted that the DMR Code number listed on the report of the Allison and Haney Sand and Gravel Pit at Shiprock, New Mexico was incorrectly given as 414-61-29-14411. The correct number is 41461-29-021-14411. Would you please change the number on your report to correspond to the above correct number.

Very truly yours,

A. C. Moschetti
A. C. Moschetti
Acting

J. Howard Bird
District Supervisor

cc: Commr. Indian Affairs, Washington, D. C.
Area Dir., Bur. Ind. Aff., Gallup, N. M.
Supt., Navajo Service, Window Rock, Ariz.
Chairman, Nav. Council, Window Rock, Ariz.
Tribal Mining Engr., Window Rock, Ariz. ✓

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THE NAVAJO TRIBE

JAN 6 1964

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UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

P. O. BOX 1716
CARLSBAD, NEW MEXICO
September 30, 1963

MINE INSPECTION REPORT
A & B MINING COMPANY
NAVAJO RESERVATION
SAN JUAN COUNTY, NEW MEXICO

PERMIT #584

by
Howard B. Nickelson
Mining Engineer

U. S. DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
BRANCH OF MINING OPERATIONS
CONSERVATION DIVISION

The property was examined on September 17, 1963. Mr. Ray Williams, mine operator, accompanied the examiner. The mine is opened by a flat incline. The ore and waste is loaded by an Oliver end loader powered by a Deutz diesel engine into a Wagner buggy. The Oliver end loader is not Bureau of Mines approved but it is a similar engine used in Wagner buggy. No excess smoke was observed from these machines. The mine is ventilated by fan and metal vent pipe blowing into the mine. The fan was rated at about 5,000 cfm. An auxiliary fan was used to pick up the air and blow it into the working areas. Ventilation appeared adequate. Ground conditions appeared good. The miners appeared to be conscientious about barring down the haulage ways and working places. Some props are used where necessary. Housekeeping in the mine and on the surface is good.

Howard B. Nickelson

Howard B. Nickelson
Mining Engineer

Orig. to: Supt., Navajo Agency
cc: Comm., Office of Indian Affairs
: Navajo Tribal Mining Engineer
: Chief, Branch of Mining Operations
: Bureau of Mines, Denver
: Files



UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

P. O. BOX 1716
CARLSBAD, NEW MEXICO
August 14, 1963

MINE INSPECTION REPORT URANIUM PERMIT #584
A & B MINING COMPANY IVOR & WILLIAM ADAIR
NAVAJO RESERVATION
SAN JUAN COUNTY, NEW MEXICO

by
Howard B. Nickelson
Mining Engineer

U. S. DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
BRANCH OF MINING OPERATIONS
CONSERVATION DIVISION

No one was at the property on August 6, the day of the visit. Mr. Willam's operator was contacted at his trailer at Sanostee. He took several days off to move his family to Sanostee. The mine had not been worked for about a week. The mine road probably needed repair as several rains had fallen in the area, which would wash the road. Mr. Joe Longacre, Deputy State Mine Inspector, was also at the trailer. He planned to inspect the mine but will postpone the inspection until the property is operating, probably a few weeks.

Howard B. Nickelson
Howard B. Nickelson
Mining Engineer

Orig. to: Supt., Navajo Agency
cc: Comm., Office of Indian Affairs
: Navajo Tribal Mining Engineer ✓
: Chief, Branch of Mining Operations
: Bureau of Mines, Denver
: Files



IN REPLY REFER TO:

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

P. O. BOX 1716
CARLSBAD, NEW MEXICO
April 22, 1963

MINE INSPECTION REPORT URANIUM PERMIT #584
A & B MINING COMPANY IVOR & WILLIAM ADAIR
NAVAJO RESERVATION
SAN JUAN COUNTY, NEW MEXICO

by
Howard B. Nickelson
Mining Engineer

U. S. DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
BRANCH OF MINING OPERATIONS
CONSERVATION DIVISION

The property was examined on April 10, 1963. On the day of the inspection no one was at the property. Machinery and equipment were at the property. I heard that Mr. Williams, operator, was negotiating an agreement to operate the mine under some working agreement with Mr. Adair.

Howard B. Nickelson
Howard B. Nickelson
Mining Engineer

Orig. to: Supt., Navajo Agency
cc: Comm., Office of Indian Affairs
: Navajo Tribal Mining Engineer ✓
: Chief, Branch of Mining Operations
: Bureau of Mines, Denver
: Files



UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

P. O. BOX 1716
CARLSBAD, NEW MEXICO

May 15, 1963

A & B Mining Co.
P. O. Box 392
Moab, Utah

Gentlemen:

This office is in receipt of an inspection report by R. C. Derzay, Mining Health and Safety Engineer, U. S. Bureau of Mines, for the Enos Johnson (Sanastee) mine located on Navajo uranium mining permit No. 584, dated April 23, 1963.

Among other unsafe conditions, the report shows that radon-daughter concentration of a sample taken in the NW stope was 12X W.L. Accordingly, it has not already been done, you are directed to stop all production from this stope and remove all workmen therefrom until the concentration has been reduced to a safe working level. It is indicated that the excessive concentration was the result of management not demanding that ventilation tubing be extended to the working area.

It is also expected that the other unsafe conditions listed in the report be corrected immediately.

Sincerely,

C. M. McConnell
Deputy Regional Mining Supervisor

cc: Chief, Branch of Mining Operations, Washington, D. C.
New Mexico State Mine Insp.
Navajo Tribal Mining Dept.
Superintendent, Navajo Agency

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF MINES
HEALTH AND SAFETY ACTIVITY

District H

1457 Ammons Street
Post Office Box 15037
Lakewood 15, Colorado

May 2, 1963

File No. *473.1

Subject: Uranium Mine Inspection
Enos Johnson Mine
A and B Mining Company
Sanostee, San Juan Co., New Mexico
April 23, 1963
By R. C. Derzay

Mr. Ray Williams, Partner
A and B Mining Company
P.O. Box 536
Little Water, New Mexico

Dear Mr. Williams:

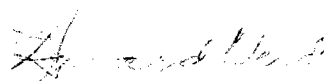
Enclosed are copies of a health and safety inspection report on the above named mine.

The extra copies are for distribution to those you may designate within your organization.

Some suggestions are offered with the intent to improve the conditions affecting the health and safety of the employees.

We will appreciate receiving your comments regarding the inspection.

Very truly yours,


J. Howard Bird
District Supervisor

Enclosures (3)

cc: James Westfield	Commr. Indian Affairs
F. T. Moyer	Area Director, Bureau of
William Hays	Indian Affairs
J. D. Turner	Mining Valuation Engineer
R. S. Fulton	C. V. Collins ✓
Phoenix Office	Chairman, Navajo Tribal Council
Files	

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF MINES
HEALTH AND SAFETY ACTIVITY

HEALTH AND SAFETY INSPECTION REPORT
ENOS JOHNSON MINE (URANIUM)
A AND B MINING COMPANY
SANOSTEE, SAN JUAN COUNTY, NEW MEXICO

April 23, 1963

By

R. C. Derzay
Mining Health and Safety Engineer

Originating Office - Bureau of Mines
1457 Ammons, P.O. Box 15037, Lakewood 15, Colorado
J. Howard Bird, District Supervisor
Health and Safety, District H

HEALTH AND SAFETY INSPECTION REPORT
ENOS JOHNSON MINE (URANIUM)
A AND B MINING COMPANY
SANOSTEE, SAN JUAN COUNTY, NEW MEXICO

April 23, 1963

By

R. C. Derzay
Mining Health and Safety Engineer

INTRODUCTION

This report is based on a health and safety inspection made in compliance with Order No. 1940, April 4, 1944, by the Secretary of the Interior authorizing the Bureau of Mines to inspect mines on Indian Lands and Government-leased lands on the Public Domain.

The purpose of the inspection and the report is to call to the attention of all concerned the hazards observed in the mine and surface plant during the inspection and to recommend means of correcting these hazards.

Recommendations repeated from the last report, January 10, 1963, are indicated by asterisks.

GENERAL INFORMATION

The Enos Johnson underground, uranium mine is about 9 miles west of Sanostee, San Juan County, New Mexico. It was operated by the A and B Mining Company, Ray Williams, Partner, P.O. Box 536, Little Water, New Mexico.

Three men were normally employed at the mine one shift a day, 5 days a week. At the time of the inspection Mr. Williams and one miner were working in the mine.

SURFACE

The 210 cfm compressor was equipped with an extended stack to disperse the engine exhaust gases. The compressor was also equipped with safety relief valve and drain valve.

STORAGE AND USE OF EXPLOSIVES

One box and part of another box of dynamite were left in a short crosscut near the drift approaching the working area.

LOADING, HAULING AND DRILLING

The two diesel-powered units described in the previous report were being used. As one of the units has not been approved by the Bureau of Mines no action during this survey shall be interpreted as official approval of this equipment.

GROUND CONTROL

The mine was in sandstone. Hazardous back or walls were not observed. A scaling bar was available and used in the working place.

VENTILATION

The mine was ventilated by two fans moving about 5000 cfm of air. The fans, operating exhausting, were in series in fan pipe. An auxiliary fan with tubing blew about 300 cfm of air toward the working place. However, the tubing ended too far from the men for this ventilation to be effective.

At the time of the survey the temperature was 56 degrees F and the relative humidity was 88 percent.

RADIATION

Radon-daughter concentrations measured and other data are listed in Table 1. Table 2 lists the projected average daily exposure levels experienced by the miners at the time of the survey.

Table 1

Location, Time, Number of Men, Operation	Radon-daughter Concentration W.L. <u>1/</u>	V ₁ c.f.m. <u>2/</u>	V ₂ c.f.m. <u>3/</u>
NW stope; 10:30 am; 2 men; drilling	12.	Estimated 100	Estimated 400
Travelway from stope to portal; 11:12 am	3.0	Varied from 100 to 5000	---

1/ Reported in multiples of a safe working level (W.L.).

2/ Measured ventilation

3/ The amount of air required to reduce the radon daughters to one W.L. from equation $V_2 = V_1 (W.L.)^{0.56}$.

Table 2

No. Men	Location Operation	Estimated average full shift exposure to radon daughters ^{1/}
1	NW stope, mining	9.5
1	Various; tramming, mining, supervising	5.0

^{1/} These average levels are estimated from information gained in questioning the miners as to where their time is spent and weighting the radon-daughter concentrations in these various places by the time spent in them.

QUALITY OF AIR

Direct reading field test instruments were used to measure CO (carbon monoxide) and NO₂ (nitrogen dioxide) concentrations in the mine air during this survey.

In addition, a mine air sample was collected in a vacuum bottle during the survey and was analyzed in the Bureau of Mines laboratory, Denver, Colorado.

Both field test and laboratory analytical results are shown in Table 3.

Table 3

Sample No.	Place, time	PERCENT					Ppm* NO ₂
		O ₂	CO ₂	CO	CH ₄	N ₂	
	NW stope, 10:32 am	--	--	Trace	--	--	0
X-1390	NW stope, 11:00 am	20.83	0.10	--	0.01	79.06	--

*Parts per million

Air for ventilation is considered to be of satisfactory quality when it contains at least 19.5 percent O₂ (oxygen), not more than 0.5 percent CO₂ (carbon dioxide), and no harmful quantities of dust or noxious gases. The threshold limit value for CO is 0.01 percent and for NO₂ is 5 parts per million.

The results listed in Table 3 indicate that the air was of satisfactory quality with respect to these gases at the times and places shown.

GENERAL HEALTH AND SAFETY

The men did not wear safety-toe shoes.

SAFETY IMPROVEMENT

The following safety improvement was made during the survey.

Storage and Use of Explosives

Empty boxes piled near the explosives magazine were removed.

RECOMMENDATIONS

Storage and Use of Explosives

*Dynamite should not be left unprotected at the side of a travelway. Either a box-type magazine constructed of non-sparking material should be provided for the temporary storage of small amounts of explosives or unused dynamite should be returned to the magazine.

Only Bureau of Mines approved ^{1/} mobile diesel-powered equipment should be used underground. Bureau of Mines approved equipment should be used to replace or add to the mobile diesel-powered equipment now in use underground when replacement of present equipment, or additional equipment, is necessary.

Ventilation

The ventilation tubing should be extended a sufficient distance so the ventilating air would effectively sweep the working area. A maximum distance of 30 feet from the men is recommended.

Radiation

Control measures should be taken to reduce the men's average, full-shift, radon-daughter exposure to one working level or less.

General Health and Safety

*The men should wear hard-toed shoes.

^{1/} Bureau of Mines approvals for mobile diesel-powered equipment are issued to the manufacturer only after application to and tests by the Branch of Electrical-Mechanical Testing, Bureau of Mines, Pittsburgh 13, Pennsylvania. Approved equipment is identified by a Bureau of Mines approval plate attached to each complete unit.

ACKNOWLEDGMENT

The cooperation of Mr. Williams and the miner during the inspection is gratefully acknowledged.

Respectfully submitted,

R. C. Derzay
R. C. Derzay
Mining Health and Safety Engineer

Approved

J. Howard Bird
J. Howard Bird
District Supervisor



UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

P. O. BOX ~~222~~ 1716
CARLSBAD, NEW MEXICO
January 30, 1963

MINE INSPECTION REPORT URANIUM PERMIT #584
A & B MINING COMPANY IVOR & WILLIAM ADAIR
NAVAJO RESERVATION
SAN JUAN COUNTY, NEW MEXICO

by
Howard B. Nickelson
Mining Engineer

U. S. DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
BRANCH OF MINING OPERATIONS
CONSERVATION DIVISION

The property was inspected on January 18, 1963. A previous examination was made on August 17, 1962. Several attempts were made to inspect the property in the above interval but the roads were impassable due to heavy rains. Mr. Williams, mine operator, accompanied the examiner.

The mine is ventilated by a fan on the surface sucking about 5,500 cfm through 15-inch metal pipe. The end of the pipe is about 50 feet below any of the active workings. A small electric driven fan mounted in the fresh air stream coming down the incline is used to ventilate one of the workings off the left side of the incline. This working is about 150 feet off the incline. Ventilation appears adequate. No bad fumes was noted when the diesel motors were operating. The ore is loaded by diesel driven end loader into a diesel driven wagon. The wagon is U. S. Bureau of Mines approved but the loader is unapproved. Ground support appears adequate. Timbers are placed where needed and the backs are checked and barred down whenever it is needed. Conditions on the surface were good. The powder magazines was locked and clean. Three men are employed.

Howard B. Nickelson
Howard B. Nickelson
Mining Engineer

Orig. to: Supt., Navajo Agency
cc: Comm., Office of Indian Affairs
: Navajo Tribal Mining Engineer
: Chief, Branch of Mining Operations
: Bureau of Mines, Denver
: Files

1457 Asmons Street
P.O. Box 15037
Lakewood 15, Colorado

XXXXXXXXXX
XXXXXXXXXXXX
XXXXXXXXXXXXXXXXXXXX

FEB 1 1963

File No. 437.2

Subject: Metal mine survey
Enos Johnson Mine (Uranium)
A and B Mining Company
Sanostee, San Juan County, New Mexico
January 10, 1963
By R. C. Derzay

Mr. Ray Williams, Partner
A and B Mining Company
P.O. Box 336
Bluewater, New Mexico

Dear Mr. Williams:

Attached are copies of a report covering a Federal survey of the above-named mine. The survey was made pursuant to provisions of Public Law 87-300.

Any comments you desire to make concerning the survey or report will be appreciated.

Very truly yours,

J. Howard Bird
J. Howard Bird
District Supervisor

Attachments (4)

cc: ✓ C. V. Collins, Tribal Mining Engineer, Window Rock, Arizona

will 2-4-63

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF MINES
HEALTH AND SAFETY ACTIVITY

HEALTH AND SAFETY INSPECTION REPORT
ENOS JOHNSON MINE (URANIUM)
A AND B MINING COMPANY
NAVAJO INDIAN RESERVATION
SANOSTEE, SAN JUAN COUNTY, NEW MEXICO

January 10, 1963

By

R. C. Derzay
Mining Health and Safety Engineer

Originating Office - Bureau of Mines
1457 Ammons Street, P.O. Box 15037, Lakewood 15, Colorado
J. Howard Bird, District Supervisor
Health and Safety District H

HEALTH AND SAFETY INSPECTION REPORT
ENOS JOHNSON MINE (URANIUM)
A AND B MINING COMPANY
NAVAJO INDIAN RESERVATION
SANOSTEE, SAN JUAN COUNTY, NEW MEXICO

January 10, 1963

By

R. C. Derzay
Mining Health and Safety Engineer

INTRODUCTION

This report is based on a health and safety inspection made in compliance with Order No. 1940, April 4, 1944, by the Secretary of the Interior authorizing the Bureau of Mines to inspect mines on Indian Lands and Government-leased lands on the Public Domain.

The purpose of the inspection and the report is to call to the attention of all concerned the hazards observed in the mine and surface plant during the inspection and to recommend means of correcting these hazards.

The last inspection was made December 11, 1958. Since that time there has been a change of operators.

GENERAL INFORMATION

The Enos Johnson mine, previously the Rowland Young mine, was about 9 miles west of Sanostee, San Juan County, New Mexico. The underground uranium mine was operated by the A and B Mining Company, Ray Williams, ~~Partner~~, P.O. Box 536, Bluewater, New Mexico.

Three men were normally employed at the mine one shift a day, five days a week. At the time of the inspection one miner and Mr. Williams were working in the mine.

The mine was opened by several interconnecting adits in the side of a sandstone bluff. All but one of the adits had been sealed off to control the flow of ventilating air. The adit, about 9 feet high, 7-1/2 feet wide and 800 feet long with a split about 150 feet long, was inclined downward about 5 degrees. The ore horizon was about 2 feet thick, necessitating resuing.

SURFACE

Surface installations included a portable 210 cfm compressor equipped with safety and drain valves. The exhaust stack was close enough to the air inlets so that with certain wind conditions the exhaust gases could be introduced into the mine through the compressed air.

Buildings had not been erected on the property; supplies were stored inby the portals of short adits near the operating adit.

FIRE HAZARDS AND FIRE FIGHTING EQUIPMENT

A relatively small amount of timber was used in the mine. Fire extinguishers were kept readily available on the mobile equipment. Fuel was stored in 55-gallon drums in the short storage adits.

STORAGE AND USE OF EXPLOSIVES

Explosives were stored in an abandoned dead-end adit about 200 feet from the mine. The magazine was locked, posted and clean. The storage area was recessed about 30 feet and offset so that only a deliberately aimed bullet from the mine yard could strike the explosives. Twelve boxes of dynamite were in the magazine at the time of the survey.

Blasting caps were stored in a locked wooden box kept in another adit. Fuse was cut and capped on a clean bench using crimpers. Fuse was cut to 5-foot lengths for rounds up to 4 holes, 6-foot lengths for up to 20 holes and 8-foot lengths for more than 20 holes to a round.

The holes were ignited individually using lead ignitor. A two-foot length was unreeled serving to assist timing the man's stay at the breast.

Part of a case of dynamite was left by the side of drift between the upper and lower workings.

TRAVELWAYS

Travel throughout the mine was accomplished with relative ease and safety. The haulageway was well compacted and free of obstacles.

LOADING, HAULING AND DRILLING

Broken rock was mucked up using a diesel-powered, front-end loader. A diesel-powered, 3-ton capacity truck with USBM approval number 24-24 was used to tram broken rock out of the mine. Both units had effective lights. As one of the pieces of mobile diesel-powered equipment used in this mine has not been approved by the Bureau of Mines no action during this survey shall be interpreted as official approval of this equipment.

GROUND CONTROL

The portal was timbered and back-lagged. Stulls and timber were used in the few places where needed. Abandoned areas of the mine were posted "Keep Out."

VENTILATION

The mine was ventilated by a diesel-powered fan on the surface moving about 5,000 cfm of air. The air entered through the adit, flowed to the lower workings and was exhausted through ventilation tubing. The upper workings were ventilated with approximately 300 cfm of air by an electrically powered auxiliary fan and tubing.

The engine powering the surface fan was equipped with a 20-foot extension on the exhaust to minimize exhaust gases from being introduced into the mine.

At the time of the survey the temperature was 50 degrees F and the relative humidity was 87 percent.

RADIATION

The concentration of radon-daughter products in the mine atmosphere is reported as a multiple of a working level (W.L.). One working level, 1.3×10^5 million electron volts of potential alpha energy per liter of air, is considered to be the maximum concentration to which a man can be safely exposed throughout his working lifetime. U. S. Public Health Service Publication No. 494 describes the sampling method, which consists of filtering the daughters from a known volume of air and measuring the alpha activity on the filter.

Excessive concentrations of radon daughters indicate a need for more ventilation or more control of the radon entering the ventilating air or both. Frequently, radon can be controlled by sealing off abandoned stopes through or by which intake air is coursed.

Increasing the flow of air to the working place is the most effective means of reducing high radon-daughter concentrations to a safe level. The volume of air required to reduce a specific concentration to a safe level can be calculated from the equation

$$V_2 = V_1 (W.L.)^{0.56},$$

where V_2 is the required volume of air in c.f.m.,

V_1 is the existing ventilation, c.f.m., at time of sampling,
and

W.L. is the measured multiple of a working level.

The required volume of air, V_2 , would be higher if the incoming air is contaminated.

Radon daughter concentrations measured and other data are listed in Table 1. Table 2 lists the projected average daily exposure levels experienced by the miners at the time of the survey.

Table 1

Location, Time, Number of Men, Operation	Radon-daughter Concentration W.L. ^{1/}	V_1 c.f.m. ^{2/}	V_2 c.f.m. ^{3/}
Upper workings; 11:35 a.m. no men - had shot a round about 1 hour earlier	6.5	300	850
lower workings; 11:47 a.m. 2 men, mucking	9.5	5,000	<u>4/</u>
Haulageway, 12:03 p.m. travelway	0.0	5,000	-

1/ Reported in multiples of a safe working level (W.L.).

2/ Measured ventilation

3/ The amount of air required to reduce the radon daughters to one W.L. from equation $V_2 = V_1$ (W.L.) 0.56.

4/ The sampled-working-area was not being swept by the ventilating air.

Table 2

No. Men	Location Operation	Estimated average full shift exposure to radon-daughters ^{1/}
1	Lower workings; mining	7.0
1	Various; tramming, mining, supervising	2.0

1/ These average levels are estimated from information gained in questioning the miners as to where their time is spent and weighting the radon-daughter concentrations in these various places by the time spent in them. Main areas of exposure are generally included, such as working place, lunch, travel to and from stope, securing supplies, etc.

QUALITY OF AIR

Direct reading field test instruments were used to measure CO (carbon monoxide) and NO₂ (nitrogen dioxide) concentrations in the mine air during this survey.

In addition a mine air sample was collected in a vacuum bottle during the survey and was analyzed in the Bureau of Mines laboratory, Denver, Colorado.

Both field test and laboratory analytical results are shown in Table 3.

Table 3

Sample No.	Place, time	P E R C E N T					Ppm*
		O ₂	CO ₂	CO	CH ₄	N ₂	NO ₂
	Upper workings, 11:32 a.m.	-	-	0.005	-	-	0
X-784	Lower workings, 11:45 a.m.	20.83	0.12	trace less than 0.003	0.00	79.05	-

*Parts per million

Air for ventilation is considered to be of satisfactory quality when it contains at least 19.5 percent O₂ (oxygen), not more than 0.5 percent CO₂ (carbon dioxide), and no harmful quantities of dust or noxious gases. The threshold limit value for CO is 0.01 percent and for NO₂ is 5 parts per million.

The results listed in Table 3 indicate that the air was of satisfactory quality with respect to these gases at the times and places shown.

ELECTRICITY AND ILLUMINATION

A 10-kw diesel generator provided electrical power for the mine. The unit was frame grounded and moving parts were guarded.

Electric cap lamps were used for underground illumination.

GENERAL HEALTH AND SAFETY

The miners wore hard hats but did not wear safety-toed shoes. One of the men was recently trained in first-aid methods. A stretcher and first-aid supplies were readily available.

RECOMMENDATIONS

The following recommendations are offered with intent to improve the health and safety conditions at the mine.

Storage and Use of Explosives

Dynamite should not be left unprotected at the side of a travelway. Either a box magazine of non-sparking material should be provided for the temporary storage of small amounts of explosives or unused dynamite should be returned to the magazine.

Loading, Hauling and Drilling

Only Bureau of Mines approved ^{1/} mobile diesel-powered equipment should be used underground. Bureau of Mines approved equipment should be used to replace or add to the mobile diesel-powered equipment now in use underground when replacement of present equipment, or additional equipment, is necessary.

Radiation

Control measures should be taken to reduce the men's average full shift exposure to radon-daughter concentrations to one working level or less.

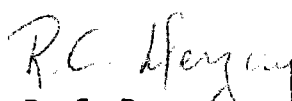
General Health and Safety

The men should wear hard-toed shoes.

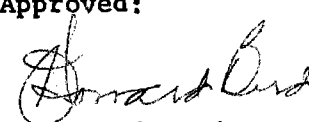
ACKNOWLEDGMENT

The cooperation of Mr. Williams and the miner are gratefully acknowledged.

Respectfully submitted,


R. C. Derzay
Mining Health and Safety Engineer

Approved:


J. Howard Bird
District Supervisor

^{1/} Bureau of Mines approvals for mobile diesel-powered equipment are issued only after application to and tests by the Branch of Electrical-Mechanical Testing, Bureau of Mines, Pittsburgh 13, Pennsylvania. Approved equipment is identified by a Bureau of Mines approval plate attached to each complete unit.



UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

P. O. BOX 829
CARLSBAD, NEW MEXICO
August 28, 1962

MINE INSPECTION REPORT URANIUM PERMIT # 18
A & B MINING COMPANY IVOR & WILLIAM ADAIR
NAVAJO RESERVATION
SAN JUAN COUNTY, NEW MEXICO

by
Howard B. Nickelson
Mining Engineer

U. S. DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
BRANCH OF MINING OPERATIONS
CONSERVATION DIVISION

The property was inspected on August 17, 1962. Mr. Williams, mine foreman, accompanied the examiner. A previous inspection was made on July 17, 1962 with Mr. Collins, tribal engineer, and at that time the mine had just been reopened after the State Mine Inspector had closed the property for poor ventilation, ground conditions, and other violations.

Since the last inspection the mining area has retreated about 100 feet toward the portal. The mining consist of taking up ore in the floor and following thin beds into the walls along the edge of the previously mined room and pillar stopes. The ore is transported out of the mine by a diesel wagon and loaded underground by a diesel end loader. The diesel wagon is U. S. Bureau of Mines approved, but the end loader is unapproved.

In the previous report Mr. Williams stated he would try and seal the old workings from the working area by piling waste in the openings. This has not been done. The mine is ventilated by a fan sucking about 5,500 cfm of air from the mine. The end of the 15-inch metal vent pipe is about 75 feet ahead of any areas being worked thus these areas are in fresh air stream coming down the incline. A small electric fan was used to blow fresh air into one side of the working area. Ventilation appeared adequate.

Ground conditions in the roof appeared good but several large slabs were noted along the ribs of the pillars in the working area. Mr. Williams stated the roof was checked every day and any loose material was barred down. In this particular area the roof is 12 to 15 feet above the floor and difficult to timber. Constant attention of the small shaley bands in the massive sandstone is necessary but if this is done the roofs appear

to be solid and not need timber. Mr. Williams was asked to remove the slabs along the ribs of the pillars.

The operator is blasting the waste away from the ore bands thus keeping the grade above 0.2% U_3O_8 . The previous operators tried to include the waste between the ore bands and had trouble making the ore economical.

The powder magazine was clean and locked. A separate compartment was made in a wooden box for the caps. The fly wheels on the drive side of the generator was fenced off. Housekeeping around the surface was good. Four men work at the property.

Howard B. Nickelson
Howard B. Nickelson
Mining Engineer

Orig. to: Supt., Navajo Agency
cc: Comm., Office of Indian Affairs
: Navajo Tribal Mining Engineer ✓
: Chief, Branch of Mining Operations
: Bureau of Mines, Denver
: Files

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THE NAVAJO TRIBE
AUG 31 1962
MINING DEPT.



UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

P. O. BOX 829
CARLSBAD, NEW MEXICO

July 24, 1962

MINE INSPECTION REPORT URANIUM PERMIT # 18
A & B MINING COMPANY IVOR & WILLIAM ADAIR
NAVAJO RESERVATION
SAN JUAN COUNTY, NEW MEXICO

by
Howard B. Nickelson
Mining Engineer

U. S. DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
BRANCH OF MINING OPERATIONS
CONSERVATION DIVISION

The property was visited on July 17, 1962, with C. V. Collins, Navajo tribal mining engineer. Mr. Williams, mine foreman, accompanied the examiners.

The mine was opened by a 5 to 8 degree incline approximately 1000 feet long. Room and pillar stopes branch from the incline. Present mining, consisting of pillar removal, is being done approximately 600 feet from the portal. The ore occurs in Salt Wash formation a sandstone laced with clay bands. Ground conditions are generally good.

Approximately three weeks or a month before this inspection the New Mexico State Mine Inspectors office inspected the mine and stopped production until ventilation, timbering, and other violations had been corrected. The State Inspectors visited the property twice after the first inspection. The property is now back in production after a 2 to 3 week shut down to correct the violations.

The mine is ventilated by a fan with 15 inch metal tube. The fan is sucking the air from the mine as recommended by the State Inspector. The fan was sucking 5,200 cfm from the mine on the day of the inspection. The 15 inch metal vent pipe into the mine is well hung and all small leaks were plugged with putty. The State Inspector reported 1,100 cfm entering the working area on the first inspection. It is questionable that sucking the air from the mine is the best way to reduce the radon in the working area because too much fresh air is being recirculated and the fresh air is not reaching the men working ahead of the metal vent tube. The metal vent pipe cannot be extended beyond the working place because it would be damaged by blasting. The ventilation problem was

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THE NAVAJO TRIBE
JUL 30 1962
MINING DEPT.

discussed with Mr. Williams and he stated as soon as the pillars were removed in the area now being worked he would mine further up the adit toward the portal where it is possible to seal two openings and close the lower portion of the mine. This would keep radon from entering the working area from the lower and major portion of the open workings. It was also suggested that the fan be reversed to blow air into the working area when the new area is opened for mining in approximately one week.

Timbering in the pillar removal area appeared adequate on the day of the inspection. Stulls with head-boards were used to support the roof.

The ore in the mine had been transported by two diesel wagons and a diesel end-loader was used to load the ore. One of the wagons has a Bureau of Mines approval plate but the other two engines are not approved. The State Inspector prohibited the use of the non-approved wagon. An inspection of this machine showed it was in poor repair. The end loader although not approved, is new and in good shape. The State Inspector gave permission to operate this machine after the initial inspection.

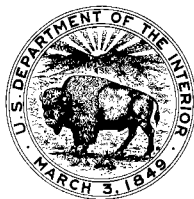
The State Inspector also cited the operator for an unlocked and dirty powder magazine and a cap storage that was also used to store tools. The powder magazine was clean and locked on the day of our inspection. The cap storage box had not been changed. Mr. Williams stated he would provide a box for the caps. Acetylene and oxygen bottles were not chained to keep them from falling over. The State Inspector also cited the operator for not having guards on the fly wheels of the generator motor and the fan and motor. The belts and pulleys of the fan and motor were guarded but the fly-wheel on the opposite side was not because a guard would hinder the cranking of the engine. The drive side of the generator and motor could be fenced off which Mr. Williams was doing on the day of the inspection. A guard on the crank side of both motors in my opinion would be more dangerous than leaving them unguarded. Both fly-wheels are smooth with out spokes and they are located away from any travel way. The only reason to be near the motors is to service and start the motors. Guards on the crank side of both motors would put obstacles in the way of anybody starting and serving the motors and may be more dangerous than the unguarded smooth fly-wheels. The belts and pulleys should be guarded.

Four men work at the property. The ore is trucked to Texas Zinc's Mill at Mexican Hat, Arizona. The grade of the ore averages between 0.22 to 0.25% U₃O₈.

Howard B. Nickelson

Howard B. Nickelson
Mining Engineer

Orig. to: Supt., Navajo Agency
cc: Comm., Office of Indian Affairs
: Navajo Tribal Mining Engineer ✓
: Chief, Branch of Mining Operations
: Bureau of Mines, Denver
: Files



UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

P. O. BOX 829
CARLSBAD, NEW MEXICO

January 19, 1962

MINE INSPECTION REPORT URANIUM PERMIT # 18
A & B MINING COMPANY IVOR & WILLIAM ADAIR
NAVAJO RESERVATION
SAN JUAN COUNTY, NEW MEXICO

by
Lawrence E. Gordon
Engineering Technician

U. S. DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
BRANCH OF MINING OPERATIONS
CONSERVATION DIVISION

On January 12, 1962, the writer accompanied by Leo Denetsone, assistant tribal engineer, made an examination of the mine on subject permit. The permit is located about 9 miles west of Sanastee, New Mexico, and is operated by Ivor and William Adair, known as the A & B Mining Company. A previous examination was made on October 18, 1961.

At the time of this examination the mine was not in operation, but evidence indicated it had been recently operated. The stockpile of ore at the mine consisted of about 50 tons and the stockpile located about 5 miles from the mine contained about 150 tons.

Since the last examination the blower fan which had burned had been replaced, powered by a gasoline engine. The power unit which was to furnish electricity to operate the booster fan had not been installed; however, the power lines and fan station had been installed.

The last production has come from the stoping operation in the rooms off both sides of the main portal, about 600 feet in from the portal entrance. The roof condition in the main haulageway and working areas appeared good. Since the roof is a fairly uniform sandstone formation very little timbering is required for roof control; however, timbers were observed in the working areas where needed.

Ventilation is by means of a blower fan located at the entrance of the mine. The air is piped to the working area through metal tubing. Further check will be made on the ventilation at a time when the mine is in operation.

Orig. to: Supt., Navajo Agency
cc: Comm., Office of Indian Affairs
: Navajo Tribal Mining Engineer
: Chief, Branch of Mining Operations
: Bureau of Mines, Denver
: Files

Lawrence E. Gordon
Lawrence E. Gordon
Engineering Technician



UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

P. O. BOX 829
CARLSBAD, NEW MEXICO
October 26, 1961

MINE INSPECTION REPORT URANIUM PERMIT # 18
A & B MINING COMPANY IVOR & WILLIAM ADAIR
NAVAJO RESERVATION
SAN JUAN COUNTY, NEW MEXICO

RECEIVED
THE MINING DIVISION
NOV 3 1961
MINING DEPT.

by
Lawrence E. Gordon
Engineering Technician

U. S. DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
BRANCH OF MINING OPERATIONS
CONSERVATION DIVISION

On October 18, 1961, the writer accompanied by Perry Johnson, a miner for A & B Mining Company examined this mine. This permit located about 9 miles west of Sanstee, New Mexico, was formerly mined by the Shiprock Industries, Inc. but was assigned to Ivor and William Adair, known as A & B Mining Company on April 20, 1961, who are now operating it.

At the time of this examination the mine was not in operation because the motor on the blower fan which ventilates the mine had burned. However, it has been in production for the past several months and production will be resumed as soon as the ventilating fan has been repaired.

This mine was developed through a shallow dipping incline shaft about 850 feet in length with rooms turned off both sides near the bottom. The shaft was driven in soft sandstone which did not require timbers to support the roof. However, near the bottom where the rooms have been mined timbers and roof bolts were observed.

The present operation consisted of stoping the bottom in the rooms. The stope is drilled with a Jack Leg drilling machine by air furnished by a 125 Gyro-Plo Ingersoll Rand mobile diesel air compressor, which was located near the shaft opening on the surface. The ore is broken with permissible power and electric caps. The broken ore is hand loaded into a 3 ton diesel powered, rubber tired buggy, and hauled to the surface where it is stockpiled.

Ventilation is by means of a blower fan located at the mouth of the shaft, the air is piped to the faces of the mine through metal tubing.

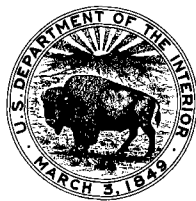
At the present time a booster fan is being installed about half way down the shaft which will serve as an exhaust fan. This fan will be operated by power furnished by a small diesel powered generator near the mouth of the shaft on the surface. This should greatly improve the ventilation in the mine. The fumes from the diesel powered buggy used in hauling the ore should readily be moved out of the mine.

According to Mr. Johnson, four men are employed in the mine when it is in operation. About 20 tons of ore a day is produced. Production from the mine will probably be suspended during the winter months.

Lawrence E. Gordon

Lawrence E. Gordon
Engineering Technician

Orig. to: Supt., Navajo Agency
cc: Comm., Office of Indian Affairs
: Navajo Tribal Mining Engineer
: Chief, Branch of Mining Operations
: Bureau of Mines, Denver
: Files



UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

P. O. BOX 829
CARLSBAD, NEW MEXICO

August 17, 1961

REPORT OF EXAMINATION
MINING PERMIT # 545
A & B MINING COMPANY
NAVAJO INDIAN RESERVATION
KAYENTA, NAVAJO COUNTY, ARIZONA

by
J. W. Hager
Mining Engineer

U. S. DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
BRANCH OF MINING OPERATIONS
CONSERVATION DIVISION

The Fern Mine located near the Utah state line was examined August 4, 1961. The mine was operated by Mr. McGee under an operating agreement with the A & B Mining Company. The A & B Mining Company holds the assignment approved March 15, 1961; this office has no details of the operating agreement.

On date of examination work had been terminated at the Fern mine and the operator was in the process of moving equipment from the Fern to the connecting mine on the Utah State land to the north.

Four pillars had been removed and ore had been recovered from the ribs in three places. The pillar along the incline had been stabbed off for a distance of about 25 feet. The operator stated that a check of all faces showed no ore worthy of mining.

Heavy stulls with 3 inch head boards have been used for roof support. The back appeared to be standing well and no major caving had occurred since pillar extraction had been completed. Only three very small pillar stumps remained in the mine.

The operator stated that no further work would be done in the Fern mine. From the period of January through May 1,685 tons ranging in grade from 0.166% to 0.478% U₃O₈ had been recovered from second mining.

On date of examination no safety violations or violations of the lease terms were noted.

Orig. To: Supt. Navajo Agency
cc: Comm., Office of Ind. Affairs
: Navajo Tribal Mining Engineer
: Chief, Branch of Mining Operations
: Bureau of Mines, Denver
: Files

J. W. Hager
J. W. Hager
Mining Engineer



UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

P. O. Box 829
Carlsbad, New Mexico
May 9, 1961

REPORT OF EXAMINATION
MINING PERMITS 539 & 545
OPERATED BY
A & B MINING COMPANY
NAVAJO INDIAN RESERVATION
KAYENTA, NAVAJO COUNTY, ARIZONA

by
C. M. McConnell
Deputy Reg. Min. Supv.

U. S. DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
BRANCH OF MINING OPERATIONS
CONSERVATION DIVISION

The Monument No. 1 Mine on mining permit No. 539 and the Fern Mine on mining permit No. 545, operated by the A & B Mining Company were examined April 14, 1961. The last examination was made January 11, 1961.

Mining Permit No. 539

Operations of the Monument No. 1 mine have been temporarily stopped. Ivan Adair, operator of the A & B Mining Company at the time of examination did not know whether they would resume operations of the property or not. The remaining ore along the north side of the pit was low grade and not economical to recover. There has been 1161 tons of ore processed at the Texas-Zinc Mill since July. The ore has varied from 0.40 percent U_3O_8 from the recovery of pillars to 0.14 percent U_3O_8 from the stripping operations.

Mining Permit No. 545

The G & G Mining Company relinquished their assignment of Mining Permit No. 545 and the assignment was cancelled March 15, 1961. An assignment to the A & B Mining Company who have been operating the property was approved March 15, 1961.

Presently the production from the Fern No. 1 mine developed on the property was coming from the extension of the east drift. The ore was found in small pods along the edges of the ore body and from the back along the drift.

Ore after blasting is loaded into a diesel operated shuttle car by hand, trammed to a ramp, and dumped. The ore is then loaded into mine cars by means of a slusher and hauled up the incline by a hoist located on the surface.

Substantial posts have been set for roof protection and ventilation is effected by a continuous current of air passing between the opening of the Fern mine and a mine opened on Utah State land and also operated by the A & B Mining Company.

A serious accident occurred in the mine on April 3 when the operator of the shuttle car was caught between the car and the back as he was dumping the car at the ramp. A 12x12 inch timber is used as a stop block at the end of the dumping ramp. After stopping the car at the ramp the operator failed to get the car out of traveling gear before engaging the hydraulic dumping mechanism. The front wheels of the car jumped over the stop block and threw the rear end of the car against the back. The operator of the car was Billy Chee, a Navajo Indian. The doctor at the Goulding Mission had the injured man flown to the hospital in Albuquerque, New Mexico. Injuries included a broken back with paralysis. At the time of examination the report was that the injured was responding to treatment.

There has been 420 tons of ore processed at the Texas-Zinc mill during January and February 1961. The ore has averaged about 0.17 percent U_3O_8 .

C. M. McConnell

C.M. McConnell
Deputy Regional Min. Supv.

Orig. to: Supt., Navajo Agency
cc: Comm., Office of Indian Affairs
: Navajo Tribal Mining Engineer
: Chief, Branch of Mining Operations
Bureau of Mines, Denver
: Files



UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

P. O. Box 619
Carlsbad, New Mexico
January 31, 1961

REPORT OF EXAMINATION
MINING PERMITS 539 & 545
OPERATED BY
A & B MINING COMPANY
NAVAJO INDIAN RESERVATION
KAYENTA, NAVAJO COUNTY, ARIZONA

by
C. M. McConnell
Deputy Regional Mining Supv.

The Monument No. 1 Mine on mining permit No. 539 and the Fern mine on permit No. 545, both operated by the A & B Mining Company and located in the western part of Monument Valley, Navajo Reservation were examined January 31, 1961. This was the first underground examination of the Fern mine since operation were resumed under the present permit. Monument No. 1 mine was last examined September 13, 1960.

MINING PERMIT NO. 539

Operation of the Monument No. 1 mine on day of examination was confined to two men moving waste rock from the north side of the open pit area to the south side with a track mounted front end loader. The waste rock was being moved preparatory to the recovery of ore along the north side of the open pit.

Since the last examination on September 13, 1960 the ore along the rib to the right of the haulage entry has been recovered and the underground workings have all been caved. The ore recovered from the underground operation averaged 0.24% U_3O_8 and 1.15% V_2O_5 . Because of the high vanadium content of the ore it was shipped to Lucius Pitkin, Inc. at Monticello, Utah in order to receive payment for vanadium. Ore recovered from the open pit operations and which is located stratigraphically above the main ore body run from 15% to 18% with less than 1% vanadium. Some 257 tons were recovered from the underground workings. Better than 900 tons has been mined under the present operation.

MINING PERMIT NO. 545

Permit No. 545 was issued to Leonard and Lucille Redhorse, July 7, 1960 and was assigned to the Archie Garwood and R. C. Gerlach acting as the G. & C. Mining Company, July 27, 1960. The records of this

office contain no information on any agreement between the assignee s and the A & B Mining Company on the operation of the mine.

Mining Permit No. 545 contains 52.56 acres which was formerly a portion of Mining Permit No. 285 which contained 599.73 acres. The Fern mine opened on the old permit produced some 7,433 tons of ore with a value of \$63.83 per ton. The mine opened on the permit was connected to the old Uranium Hills Uranium Mine, located on school lands belonging to the State of Utah. A survey of the mine made in March 1957 shows the location of the State line, which is the boundary line between the two properties, underground. A copy of the survey is in the files of this office.

The incline of the mine opened on the property under the previous permit and which was conditioned for abandonment has been cleaned out and a hoist installed and track relayed. The incline is 150 feet long. Presently production was coming from the back along the left rib of the old main entry. The back had been shot down for a distance of about 100 feet and about 15 wide from the left rib. The lip of back had been supported with substantial timbers and miners were commanded not to go under the exposed back in the old workings.

The ore was slushed to the bottom of the incline and loaded into a mine car. Ventilation of the mine was effected by a continuous flow of air through the two mines. Also some air entered the mine through several drill holes to the surface. A substantial flow of cool air could be detected past the working area. The foreman was cautioned on the possibility of the restriction of air flowing through the mine when surface temperatures were the same as underground temperature and was advised to place a fan at a drill hole in the vicinity of the working area to prevent the accumulation of radon daughters.

No settlement sheets of ore delivered to any mill has as yet been received by this office. Four miners and a foreman were employed at the mine. No violation of operating regulations or lease terms other than the approval of an operating agreement were observed.

C. M. McConnell

C. M. McConnell
Deputy Regional Min. Supv.

Orig. to : Supt., Navajo Agency
cc: Comm., Office of Indian Affairs
: Navajo Tribal Mining Engineer
: Chief, Branch of Mining Operations
: Files
: Bureau of Mines, Denver



UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF MINES

HEALTH AND SAFETY ACTIVITY

XXXXXXXXXX

Subdistrict Office

October 3, 1960

Mr. Ivor Adams, Manager
A & B Mining Co.
Box 102
Monte, Utah

Dear Mr. Adams:

The enclosed copies of a health and safety inspection report by L. G. Anderson on the Monument No. 2 mine, Navajo County, Arizona, contain information as found during an inspection on September 13, 1960. The extra copies are for distribution to those you may designate.

The recommendations are offered with intent to improve the conditions affecting the health and safety of the employees.

We will appreciate receiving your comments regarding the inspection.

Very truly yours,

E. A. Morgan
E. A. Morgan
Subdistrict Supervisor

Encl. (3)

cc: Commr. of Ind. Affairs, Washington, D. C.
Area Director, Bur. of Ind. Affairs, Gallup, N. M.
Chairman, Navajo Tribal Council, Window Rock, Ariz.
Supt., Navajo Service, Window Rock, Ariz.
✓ Tribal Mng. Engr., Window Rock, Ariz.
Ariz. state mine inspector, Phoenix, Ariz.
AEC, Div. of Raw Materials, Washington, D. C.
" Prod. and Eval. Div., Grand Junction, Colo.
USPHS, Salt Lake City, Utah
U. S. Dept. of Labor, Denver, Colo.
USGS, Washington, D. C.
" Carlsbad, N. M.
Washington
Denver
Files

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF MINES

HEALTH AND SAFETY ACTIVITY

HEALTH AND SAFETY INSPECTION REPORT
MONUMENT NO. 1 MINE (URANIUM)
A & B MINING COMPANY
NAVAJO INDIAN RESERVATION
KAYENTA, NAVAJO COUNTY, ARIZONA

September 13, 1960

By

L. G. Anderson
Mining Health and Safety Engineer

Originating Office - Bureau of Mines
215 Ellis Building, Phoenix, Arizona
E. A. Morgan, Subdistrict Supervisor
Phoenix, Arizona Subdistrict Health and Safety District H

HEALTH AND SAFETY INSPECTION REPORT
MONUMENT NO. 1 MINE (URANIUM)
A & B MINING COMPANY
NAVAJO INDIAN RESERVATION
KAYENTA, NAVAJO COUNTY, ARIZONA

September 13, 1960

By

L. G. Anderson
Mining Health and Safety Engineer

INTRODUCTION

This report is based on a health and safety inspection made in compliance with Order No. 1940, April 4, 1944, by the Secretary of the Interior, which provides for such inspections of mines on Government-leased lands on the Public Domain and on Indian lands by the Bureau of Mines.

The purpose of the inspection and the report is to call to the attention of all concerned the hazards observed in the mine and surface plant during the inspection and to recommend means of correcting these hazards.

GENERAL INFORMATION

The Monument No. 1 mine, situated on the Navajo Indian Reservation about 19 miles north of Kayenta, Navajo County, Arizona, was formerly operated by the Copper Canyon Uranium Industries Corporation of Farmington, New Mexico, under Mineral Permit No. 77. The company abandoned the mine and moved all buildings and equipment from the property in the early part of 1956 and their permit was canceled. The last federal inspection of the Monument No. 1 mine R2 was made October 4, 1955. The mine was operated by underground methods at this time. Recommendations made in the R2 report have been deleted as they are no longer applicable to the present open-pit mining operation.

The Monument No. 1 mine operated by the A & B Mining Company, Box 392, Moab, Utah, under Mineral Permit No. 539 is the same property as described above under M. P. 77 and is now an open-pit operation. The overburden averaging about 20 feet of sandstone is being stripped from above the old underground workings. Small pods of ore in the overburden were being hand-sorted and the recovery of some high-grade pillars was contemplated as well as recovering some ore along the fringe areas of the old workings. Mining equipment consisted of:

- 2 bulldozers
- 1 gasoline-driven slusher
- 1 air-driven slusher

- 1 500-c.f.m. portable compressor
- 1 105-c.f.m. portable compressor
- 1 Bureau of Mines approved new diesel-powered 3-ton truck. Approval No. 24-24 (9-9-59), Model D B3, built by Young's Machine Company, Monticello, Utah
- 2 jackleg drills and numerous hand tools
- 1 dump truck
- 1 small wagon drill

The pit was about 50 feet wide, 100 feet long, and 30 feet deep. Some ore along the outcrop was being recovered by hand-sorting after blasting and bulldozing the ore-bearing formation along one of the access roads to the old mine portal.

At the time of this inspection 10 men were employed on a 5-day week single-shift basis. Average daily production was about 10 tons of ore. The estimated life of the mine was about 2 months.

SURFACE

There were no buildings on the property. Fuel was stored in three 50-gallon drums. A hand pump was used to pump fuel from the drums through a rubber hose to equipment supply tanks. The portable compressors were equipped with safety and drain valves.

EXPLOSIVES STORAGE

Thirteen 50-pound cases of explosives were properly stored in an old barricaded adit some 600 or 700 feet from any mining activity. Danger signs were properly posted, and the magazine was kept locked. About $2\frac{1}{2}$ boxes of explosives were observed to be stored under a ledge above the open pit. Caps and fuses were properly stored in a box-type magazine which was provided with a lock. The magazine was located over 100 feet from the explosives-storage magazine. Explosives danger signs were suitably posted.

GROUND CONTROL

The maximum height of the highwall was about 30 feet above the floor of the old underground workings. The walls were inspected daily for loose material and loose rock was not observed.

DRILLING AND BLASTING

Jackleg drills and 6-foot steel were used to drill holes in the pit walls. A small wagon drill was used on the surface to drill deeper holes in the overburden. Water was used during all drilling operations.

The minimum length of fuse was 6 feet, and this length of fuse was used in blasting jackhammer holes; 7 and 8-foot lengths of

steel were used for deeper holes. Fuse was capped and primers were made up in the areas where the blast holes were to be charged. The foreman supervised the loading and blasting of all rounds. Wood tamping sticks were used and holes were stemmed with the damp fines from drill holes. The burning rate of fuse was not posted.

LOADING AND HAULAGE

Some of the ore was hand-sorted into small boxes holding about 50 pounds. The boxes were hand-carried to small stockpiles. Slushers were used to handle most of the overburden. Some of the ore was loaded by slusher into the 3-ton-capacity Bureau of Mines approved diesel-powered truck for transportation to stockpiles. A front-end loader was used to load the stockpile ore on trucks for transportation to the mill at Mexican Hat, Utah.

The haulage and loading equipment was maintained in good safe working condition. There were no hazards observed.

DUST

Samples for determination of airborne dust concentrations were not collected at the time of this inspection because no equipment was being operated.

ELECTRICITY

Electrical power was not being used on the property.

GENERAL SAFETY

First-aid equipment and a basket stretcher were provided. The closest medical aid was at the Goulding, Utah mission hospital, about 7 miles by road from the mine. Some of the men wore protective shoes and all of the men wore hard hats. There have been no lost-time accidents.

RECOMMENDATIONS

Explosives Storage

Unused explosives should be returned to the explosives-storage magazine and there properly stored as soon as blast holes have been charged.

Drilling and Blasting

The burning rate of fuse should be posted in a conspicuous place for the benefit of those responsible for blasting activities.

General Safety

All men should be required to wear protective shoes while working in or around the mine.

ACKNOWLEDGMENT

The cooperation of Mr. Adair and employees during this inspection is gratefully acknowledged.

Respectfully submitted,

L. G. Anderson

L. G. Anderson
Mining Health and Safety Engineer

Approved:

E. A. Morgan

E. A. Morgan
Subdistrict Supervisor



UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

P. O. Box 829
Carlsbad, New Mexico
March 27, 1958

MINE INSPECTION REPORT
ASPET CORPORATION
NAVAJO RESERVATION
APACHE COUNTY, ARIZONA

by
Chas. M. McConnell
Deputy Regional Mining Supervisor

U. S. DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
CONSERVATION DIVISION - MINING BRANCH

An uranium mine opened by the Aspet Corporation of Denver, Colorado, and located on Navajo Tribal leases contract Nos. 14-20-603-3183 & 3184 was examined March 7, 1958.

The leased land is located about 2 1/2 miles by road north of Salina Springs Trading Post in the Black Mountain district of the reservation. The mine is under the supervision of K. S. Mitty.

Production to date has come from a stripping operation, the strip pit being about 500 feet long and 150 feet wide. The north portion of the mine was on claim No. 27, lease contract No. 14-20-603-3183 and the south portion on claim No. 28, lease contract No. 14-20-603-3184.

The ore occurs in a sandstone lense that lies between a 2 foot coal seam on top and ashale bed on the bottom. The lense tapers from a thin edge along the outer circumference to 7 feet thick in the center. The coal bed appears to be high in ash and is very hard. Reportedly the beds are in the Mesaverde formation. The coal bed is very similar to the coal found in Dakota formation.

Small tongues of ore extending out from the edge of the deposit were mined underground by shovel and wheelbarrow. Neither the coal bed nor the underlying shale carried any radiation. Most of the ore had been recovered and a second ore body about 300 feet due west and on claim No. 28 was to be stripped immediately. The overburden in the producing pit as well as the one to be stripped is from 10 feet to 20 feet thick, and contains a five foot thick hard sandstone bed.

The ore is trucked to the Rare Metals Company mill at Tuba City, Arizona, which is slightly more than 100 miles distance. Mining operations appeared to be done in an orderly and safe manner.

The company is presently drilling on lands held under lease contract No. 14-20-603-3185. No ore had been found as yet.

C. M. McConnell

C. M. McConnell

Deputy Regional Mining Supervisor

Orig. to: Supt., Navajo Agency
cc: Comm., Office of Indian Affairs
: Navajo Tribal Mining Engineer
: Chief, Mining Branch
: Files

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Permit No. 336

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF MINES
DIVISION OF SAFETY

SAFETY INSPECTION REPORT
ALONGO MINE
E. J. ALONGO, OWNER
NAVAJO INDIAN RESERVATION
SHIPROCK, SAN JUAN COUNTY, NEW MEXICO

January 19, 1956

By

L. G. Anderson
Mining Health & Safety Engineer

Originating Office - Bureau of Mines
215 Ellis Building, Phoenix, Arizona
M. L. Williams, Acting Subdistrict Supervisor
Phoenix, Arizona Subdistrict Health and Safety District H

SAFETY INSPECTION REPORT
ALONGO MINE
E. J. ALONGO, OWNER
NAVAJO INDIAN RESERVATION
SHIPROCK, SAN JUAN COUNTY, NEW MEXICO

January 19, 1956

By

L. G. Anderson
Mining Health & Safety Engineer

INTRODUCTION

This report is based on a safety inspection made January 19, 1956 to obtain information relating to health and safety conditions at this mine in compliance with Order 1940, April 4, 1944, by the Secretary of the Interior, which provides for safety inspections of mines on Government-leased lands on the Public Domain and on Indian Lands by the Bureau of Mines.

The purpose of the inspection and the report thereof is to call to the attention of all concerned the hazards observed in the mine during the inspection and to recommend means of correcting these hazards.

GENERAL INFORMATION

The Alongo mine is operated by E. J. Alongo, % Red Rock Trading Post, Shiprock, New Mexico, and is situated on the Navajo Indian Reservation about 11 miles northeast by road from Red Rock Trading Post, Arizona. Mr. Alongo resides at the mine and receives his mail at Shiprock, New Mexico, % Red Rock Trading Post, Arizona. The mine is opened by a 50-foot adit in the cliff outcrop of vanadium-uranium ore-bearing sandstone. The adit is about 70 feet above the canyon floor. Ore and waste was manually loaded into a wheelbarrow for transportation to the surface where the ore was stockpiled and waste was dumped over the cliff. A small stock pile of ore was located just outby the portal, but to this date no ore shipments had been made. At the time of this inspection Mr. Alongo was the only man working in the mine. Average daily production was about $\frac{1}{2}$ ton of ore.

ROOF CONTROL

Fractures were noted in the rock above the portal.

Recommendation:

1. Fractured rock above the portal should be timbered adequately.

ACKNOWLEDGMENT

The cooperation of Mr. Alango during this inspection is gratefully acknowledged.

Respectfully submitted,

L. G. Anderson

L. G. Anderson
Mining Health & Safety Engineer



UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

P. O. Box 829
Carlsbad, New Mexico
October 31, 1960

REPORT OF EXAMINATION
MONUMENT NO. 1 MINE
MINING PERMIT NO. 539
A & B MINING COMPANY
NAVAJO RESERVATION
MONUMENT VALLEY, ARIZONA

by
C. M. McConnell
Deputy Regional Min. Supv.

U. S. DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
BRANCH OF MINING OPERATIONS
CONSERVATION DIVISION

The Monument No. 1 mine, located in the western part of Monument Valley, on the Navajo Indian Reservation, by the A. & B. Mining Company, was examined September 13, 1960. This is the first examination of the property since the issuance of this permit. The examination was made at the same time as an inspection by L. G. Anderson, Mining Health and Safety Engineer, U. S. Bureau of Mines.

Mining permit No. 539 includes the same lands formerly held under mining permits Nos. 15, (Mitten No. 2 Mine) and No. 77 (Monument No. 1 Mine). Mining permit No. 77 was officially cancelled as of April 10, 1957. The date of cancellation of mining permit No. 15 is a record of the Salt Lake Office of the Branch of Mining Operations.

Both the Mitten No. 2 and Monument No. 1 mines were formerly operated as underground mines and they were connected. Present operations has been confined to the stripping of the overburden over a portion of the old Mitten No. 2 mine. A small amount of 0.14% U₃O₈ ore was recovered at a horizon above the main orebody during stripping operations.

Present operations were confined to drilling by jackleg drills along the west rib of the underground mine just south of the old mine haulage drift. At the time of examination the only roof protection to the drillers were two pillars about 30 feet from the rib. Timber was on hand to erect cribs between the rib and the pillars and the management was directed to stop work in this section until the cribs were erected.

A small amount of ore was also being recovered by stripping methods along the out crop of the ore just south of the Monument No. 1 mine.

Ore in the Minton No. 2 Mine, both from the strip pit and the underground workings were slushed into the haulage drift up a loading ramp and hauled to the surface by a three ton diesel-powered truck. The diesel engine had a U. S. Bureau of Mines approval plate on it.

Production started in July 1960 and about 275 tons had been shipped to the mill through September. The ore averaged about 0.15% U_3O_8 . About 10 men were employed at the mine and worked 5 days a week single shift.

No unsafe conditions of serious nature other than noted was observed and no violation of lease terms was noted.

C. M. McConnell

C. M. McConnell
Deputy Regional Min. Supv.

Orig. to: Supt., Navajo Agency
cc: Comm., Office of Indian Affairs
: Navajo Tribal Mining Engineer ✓
: Chief, Branch of Mining Operations
: Bureau of Mines, Denver
: Files

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White Hair Old Boy, Permit No. 317

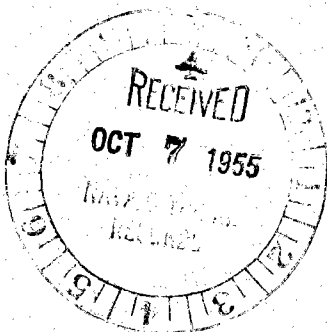
UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF MINES
DIVISION OF SAFETY

SAFETY INSPECTION REPORT
NO. 1 MINE
AMERICAN URANIUM CORPORATION
NAVAJO INDIAN RESERVATION
APACHE COUNTY, ARIZONA

September 15, 1955

By

L. G. Anderson
Mining Health & Safety Engineer



Originating Office - Bureau of Mines
140 W. Monroe St., Phoenix, Arizona
Allen D. Look, Subdistrict Supervisor
Phoenix, Arizona Subdistrict Health and Safety District H

SAFETY INSPECTION REPORT
NO. 1 MINE
AMERICAN URANIUM CORPORATION
NAVAJO INDIAN RESERVATION
APACHE COUNTY, ARIZONA

September 15, 1955

By

L. G. Anderson
Mining Health & Safety Engineer

INTRODUCTION

This report is based on a safety inspection made September 15, 1955 to obtain information relating to health and safety conditions at this mine in compliance with Order No. 1940, April 4, 1944, by the Secretary of the Interior, which provides for safety inspections of mines on Government-leased lands on the Public Domain and on Indian Lands by the Bureau of Mines.

The purpose of the inspection and the report thereof is to call to the attention of all concerned the hazards observed in the mine during the inspection and to recommend means of correcting these hazards.

GENERAL INFORMATION

The No. 1 mine, operated by the American Uranium Corporation, Craig Building, 217 South 6th Street, SW, Albuquerque, New Mexico, is located on the Navajo Indian Reservation on the west side of the Carrizo Mountains and about $1\frac{1}{2}$ miles above the mouth of Saytah Canyon and about 26 miles southwest of Tes Nos Pas Trading Post, Apache County, Arizona. Principal officers of the company were E. T. Chase, president, Craig Building, 217 South 6th Street, SW, Albuquerque, New Mexico, and William J. Elam, superintendent, 723 Fruit Avenue, NW, Albuquerque, New Mexico.

The mine is developed by a bench-cut in the uranium-vanadium ore-bearing sandstone out-crop, which is on a steep slope high above the canyon floor, and a 12-foot drift off the bench-cut. There was no haulage road to the mine and the only way to get supplies to the mine was by packing over a steep rough path. Several tons of ore were stockpiled on the bench-cut awaiting shipment when a truck haulage road is constructed. At the time of this inspection two Navajo Indians were performing all the work at the mine on a single-shift basis, 5 days a week, and the daily production was about 1 ton of uranium-vanadium ore.

A gasoline-driven jackhammer-type drill was used to drill all blast holes and was also used in the adit. Explosives were stored in the open in their original containers.

EXPLOSIVES AND BLASTING

Explosives were stored in the open.

Recommendation:

1. Suitable explosives and detonator storage magazines should be provided.

VENTILATION AND DUST

A gasoline-powered drill was used to drill blast holes. All drilling was done dry.

Recommendations:

1. Gasoline-powered machines should never be used underground.
2. Water should be used during all drilling operations.

GENERAL SAFETY CONDITIONS

Adequate first-aid material was not provided at the mine.

Recommendation:

1. A first-aid kit, stretcher and blankets should be provided and kept in a clean place accessible to the mine.

ACKNOWLEDGMENT

The cooperation of officials and employees during this inspection is gratefully acknowledged.

Respectfully submitted,

L. G. Anderson

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